



**Draft  
General Management Plan  
Wilderness Study  
Environmental Impact Statement**

**PICTURED ROCKS  
NATIONAL LAKESHORE**



# ***PICTURED ROCKS NATIONAL LAKESHORE***

July 2003

## ***Draft General Management Plan and Wilderness Study Environmental Impact Statement***

Pictured Rocks National Lakeshore  
Michigan

## HOW TO COMMENT ON THIS PLAN

Comments on this plan are welcome and will be accepted for a 90-day review period during which public meetings will be held. If you wish to respond to the material in this document, you may submit your comments by any one of several methods. You may mail written comments to:

Karen Gustin  
Pictured Rocks National Lakeshore  
P.O. Box 40  
N8391 Sand Point Road  
Munising, MI 49862-0040

You may also comment via the form on the Pictured Rocks National Lakeshore Web site ([www.nps.gov/PIRO](http://www.nps.gov/PIRO)). If you decide not to use the Web site form, please submit Internet comments as a text file avoiding the use of special characters or any form of encryption. Include your name and return address in your Internet message, and if possible, request a return receipt when sending your message. If you do not receive a confirmation from the system that we have received your Internet message, contact Brenda St Martin, 906-387-2607.

You may hand-deliver comments at one of several public meetings to be announced in the media following release of this docu-

ment. Also, comments may be taken to the national lakeshore headquarters for Pictured Rocks National Lakeshore, N8391 Sand Point Road, Munising, MI 49862.

Our practice is to make comments, including names and addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their address from the planning record, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold from the record a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

This method for public comment submittal listed above stems from recent court rulings concerning the release of public comments, and it is included as recommended by the Office of the Solicitor, Department of the Interior (DOI).

**Draft**  
**General Management Plan and Wilderness Study**  
**Environmental Impact Statement**  
Pictured Rocks National Lakeshore  
Alger County, Michigan

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Pictured Rocks National Lakeshore was established in October 1966. The last comprehensive management plan for the national lakeshore was completed in 1981. Much has changed since 1981 — visitor use patterns and types have changed, the former Coast Guard property in Grand Marais and Munising was added to the national lakeshore in 1996 and 2002, the development of a scenic drive has been prohibited by recent legislation, and revised NPS management policies allow the possibility of recommending some of the lakeshore’s lands and waters for designation as wilderness. Each of these changes has major implications for how visitors access and use the national lakeshore, the facilities needed to support those uses, how resources are managed, and how the National Park Service manages its operations. A new plan is needed.

This document examines five alternatives for managing the national lakeshore for the next 15 years. It also analyzes the impacts of implementing each of the alternatives. The “**no-action**” **alternative** describes the existing conditions and trends of national lakeshore management and assumes that these conditions would remain unchanged. It also serves as a basis of comparison for evaluating the other alternatives. The **preferred alternative** would expand opportunities for visitor use by providing additional and more convenient access to significant national lakeshore features. Federal lands in the Beaver Basin area in the national lakeshore would be proposed for designation as wilderness. Upgrading portions of County Road H-58, the responsibility of Alger County, would be recommended.

In **alternative A** management of the national lakeshore would be very similar to existing management except that administration and maintenance functions would be consolidated in new facilities at both ends of the national lakeshore, a new campground would be provided, and paving County Road H-58 from Munising to Grand Marais would be recommended. The central portion of the national lakeshore would be preserved in a relatively primitive, undisturbed state. Two other alternatives, B and D, were considered initially in efforts to consider a range of alternatives; alternative B was dropped from consideration because of the lack of public support, and alternative D was modified to create the preferred alternative.

The national lakeshore would be an easier and more convenient place to visit in **alternative C**. Improved access would be provided to additional lakeshore areas, features, and significant cultural resources. Many NPS-owned roads would be paved or improved, and paving County Road H-58 would be recommended. Facilities and infrastructure would be improved at some drive-in campgrounds. Selected cultural landscapes would be restored and interpreted.

Much of the middle third of the national lakeshore, including some Lake Superior waters, relatively small portions of the inland buffer zone, Beaver Basin, Chapel Basin, and adjacent areas, would be proposed for designated wilderness in **alternative E**, maximizing opportunities for nonmotorized recreation such as hiking and backcountry camping in a relatively remote, quiet, natural area. Within the proposed wilderness portion of the lakeshore, structures would be removed and roads would be converted to trails or closed and allowed to revert to natural vegetation. To accommodate possible increased use in the nonwilderness portion of the national lakeshore, certain roads would be upgraded, and upgrading portions of County Road H-58 would be recommended. Also, some cultural and natural features at the east and west portions of the lakeshore would be easier to get to and have more facilities and amenities than now.

This *Draft General Management Plan and Wilderness Study Environmental Impact Statement* has been distributed to other agencies and interested organizations and individuals for their review and comment. After a 90-day review period, during which public meetings will be held, comments will be analyzed, and a final plan and wilderness study/environmental impact statement will be prepared. Readers are encouraged to send written comments on this draft plan to Karen Gustin, Pictured Rocks National Lakeshore, P.O. Box 40, N8391 Sand Point Road, Munising, MI 49862-0040 or email comments to [www.nps.gov/PIRO](http://www.nps.gov/PIRO). Please note that NPS practice is to make comments, including names and addresses of respondents, available for public review; see “How to Comment on this Plan” for further information.

U.S. Department of the Interior • National Park Service

## WHY THE NATIONAL PARK SERVICE PLANS

The National Park Service (NPS) plans for one purpose — to ensure that the decisions it makes will carry out, as effectively and efficiently as possible, its mission, which is as follows:

*The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.*

In carrying out this mandate, NPS managers constantly make difficult decisions about ways to preserve significant natural and cultural resources for public enjoyment, about competing demands for limited resources, about priorities for using funds and staff, and about differing local and nationwide interests and views of what is most important. For example, *How can the fragile Everglades ecosystem be protected? What role should Zion National Park play in its surrounding ecosystem and cultural setting? What types of visitor experiences are desirable at Pictured Rocks National Lakeshore?* Planning provides methods and tools for resolving these issues and promoting mutually beneficial solutions – solutions that articulate how public enjoyment of the parks can be part of a strategy for ensuring that resources are protected unimpaired for future generations.

The National Park Service is subject to a number of legal requirements for planning, all intended to support the best possible decisions. By law, the National Park Service is required to conduct comprehensive general management planning, to base decisions on adequate information and analysis, and to track progress made toward goals. Together these processes make the National Park Service more effective, more collaborative, and more accountable.

Planning provides a balance between continuity and adaptability in a dynamic decision-making process. The success of the National Park Service will increasingly depend upon the abilities of its employees to continuously process new information and use it creatively, often in partnership with others, to resolve complex and changing issues. Planning provides a logical, trackable rationale for decision making by focusing first on why a park was established and what conditions should exist there before delving into details about specific actions. Defining the desired conditions to be achieved and maintained provides a touchstone that allows management teams to constantly adapt their actions to changing situations while staying focused on what is most important about the park. The planning process ensures that decision makers have adequate information about benefits, impacts (natural, cultural, visitor use/experience, and socioeconomic), and costs. Analyzing the park in relation to its surrounding ecosystem, historic setting, community, and a national system of protected areas helps park managers and staffs understand how the park can interrelate with neighbors and others in systems that are ecologically, socially, and economically sustainable. Decisions made within this larger context are more likely to be successful over time.

Public involvement throughout the planning process provides focused opportunities for park managers and the planning team to interact with the public and to learn about public concerns, expectations, and values. Understanding the values that people hold in relation to park resources and visitor experiences is often the key to success in coming to decisions that can be implemented. Public involvement also provides opportunities to share information about park purposes and significance, as well as opportunities and constraints regarding the management of park lands and surrounding areas.

Finally, planning helps ensure and document that management decisions are promoting the efficient use of public funds, and that managers are accountable to the public for those decisions. The ultimate outcome of planning for national parks is an agreement among the National Park Service, its partners, and the public on why each area is managed as part of the national park system, what resource conditions and visitor experiences should exist there, and how those conditions can best be achieved and maintained over time.

## HOW THE NATIONAL PARK SERVICE IS DOING PLANNING FOR PICTURED ROCKS NATIONAL LAKESHORE

The principal product of the planning process is the exploration of alternatives created with consideration of public comment and resource analysis that leads to the selection and approval of a preferred alternative for directing the future management of the national lakeshore. This document records the results of that effort. This draft document represents planning activity #4 (which is shaded below).

Planning Activity	Public Involvement Opportunities
<b>1. Initiate Project</b> <ul style="list-style-type: none"> <li>The planning team assembles and begins to identify the project's scope and issues and customize the process to fit Pictured Rocks National Lakeshore.</li> </ul>	Newsletters inform the public* about the planning process and solicit feedback from the public. The public can read the newsletters and comment on the response forms and ask to be on the national lakeshore's mailing list.
<b>2. Initiate Planning Context</b> <ul style="list-style-type: none"> <li>The team examines WHY Congress established the lakeshore and reaffirms the lakeshore's mission, purpose, and significance.</li> <li>Team members collect and analyze relevant data and public comments.</li> </ul>	Public open houses help the public learn about the planning process and add public input to the process.
<b>3. Develop and Evaluate Alternatives</b> <ul style="list-style-type: none"> <li>The planning team explores WHAT the lakeshore's future could look like, and proposes and assesses a range of reasonable alternatives for the lakeshore's future.</li> </ul>	Newsletters inform the public about the planning process and solicit feedback from the public. The public can read the newsletters and comment on the response forms and ask to be on the national lakeshore's mailing list.  Public open houses help the public learn about the planning process and add public input to the process.
<b>4. Prepare a Draft Document</b> <ul style="list-style-type: none"> <li>The team produces and publishes a <i>Draft General Management Plan and Wilderness Study Environmental Impact Statement</i> that discusses HOW each alternative concept would be attained, what the impacts of those actions would be on the environment (natural, cultural, and socioeconomic resources), and what costs would be incurred.</li> <li>The draft document describes the planning context, management alternatives, and their impacts. Based on the impacts of implementing the alternatives and public comment, the team defines the National Park Service's preferred alternative.</li> </ul>	The draft plan brings the planning process and alternatives into focus and allows the public to read the plan and comment on the alternatives and impacts presented.
<b>5. Prepare and Publish a Final Document</b> <ul style="list-style-type: none"> <li>Based on public comments on the draft document, environmental analysis, and other information, the team revises the <i>Draft General Management Plan and Wilderness Study Environmental Impact Statement</i> and distributes a final plan to the public.*</li> </ul>	The final plan allows the public to read the final document.

\* Public is defined in this document as anyone or any organization who is interested in or affected by management decisions for Pictured Rocks National Lakeshore. This includes, but is not limited to, local residents, adjacent landowners, national lakeshore staff, other governmental agencies, tribes, national lakeshore visitors, and state and national special interest organizations.



## SUMMARY

Pictured Rocks National Lakeshore was established in October 1966 by Public Law 89-668 to “preserve for the benefit, inspiration, education, recreational use, and enjoyment of the public, a significant portion of the diminishing shoreline of the United States and its related geographic and scientific features.”

The last comprehensive planning effort (general management plan) for Pictured Rocks National Lakeshore was completed in 1981. Much has occurred since 1981 — patterns and types of visitor use have changed, the national lakeshore boundary was amended in 1996 and 2002 to add the former Coast Guard property in Grand Marais and Munising, the development of a scenic drive has been prohibited by recent legislation, and revised NPS management policies allow us to examine the potential for recommending some of the lakeshore’s lands and waters for designation as wilderness. Each of these changes has major implications for how visitors access and use the national lakeshore, the facilities needed to support those uses, how resources are managed, and how the National Park Service manages its operations. A new plan is needed to

- Clearly define resource conditions and visitor experiences to be achieved in Pictured Rocks National Lakeshore.
- Provide a framework for national lakeshore managers to use when making decisions about such issues as how to best protect national lakeshore resources, how to provide a diverse range of visitor experience opportunities, how to manage visitor use, and what kinds of facilities, if any, to develop in the national lakeshore.
- Ensure that this foundation for decision making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after

an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

This *Draft General Management Plan and Wilderness Study Environmental Impact Statement* presents five alternatives, including the National Park Service’s preferred alternative, for future management of Pictured Rocks National Lakeshore. The five alternatives are the no-action alternative (continuation of existing management), the NPS preferred alternative, alternative A, alternative C, and alternative E. (Two other alternatives were presented to the public in *Newsletter 3*. Alternative B was dropped and alternative D was modified to create the preferred alternative.) The alternatives, which are based the national lakeshore’s mission, purpose, and significance, present different ways to manage resources and visitor use and improve facilities and infrastructure at the national lakeshore.

The 17,000 acres in the inland buffer zone owned by Kamehameha Schools is being sold to the ForestLand Group Limited Liability Corporation. On-the-ground management of these lands and resources may change as a result of this new ownership.

### THE NO-ACTION ALTERNATIVE

The no-action alternative describes a continuation of existing management at Pictured Rocks National Lakeshore and provides a baseline for evaluating the changes and impacts of the other alternatives. The National Park Service would continue to manage Pictured Rocks as it has in the past. Existing operations and visitor facilities would remain in place, concentrated at the west and east ends of the lakeshore, while the central portion would remain in a primitive, relatively undisturbed state. No new construction

## SUMMARY

would be authorized. Efforts would continue to restore the national lakeshore to as natural a state as possible. Natural ecological processes would continue to be allowed to occur, and restoration programs would continue or would be initiated where necessary. With few limits on visitor use, visitation could increase throughout most of the national lakeshore. County Road H-58 would probably remain a mix of paved and unpaved road. No wilderness would be proposed for designation.

The major impacts of continuing existing conditions would be as follows.

- (1) The deterioration of the museum collection.
- (2) The preservation of wilderness values, although not necessarily in perpetuity.
- (3) Some benefits from expenditures of about \$21 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy; some short-term moderate benefits for some individuals and businesses involved with daily/annual operations.
- (4) The maintenance of continuing the diverse recreational activities, the current mix of access (easy, more difficult, and challenging), access to the cliffs and beaches on the Lake Superior shoreline (with few additional restrictions on motorized and nonmotorized boats), and current man-made noise interruptions on the visitor experiences.
- (5) The likely preservation of the scenic character of County Road H-58 as it is.
- (6) Limited access for visitors with disabilities.

## THE PREFERRED ALTERNATIVE

The preferred alternative would provide additional and more convenient access to significant national lakeshore features, thus expanding opportunities for visitor use in the

national lakeshore. Efforts would continue to restore the national lakeshore to as natural a state as possible. Natural ecological processes would be allowed to occur, and restoration programs would be initiated where necessary. Federal lands in the Beaver Basin area in the national lakeshore would be proposed for designation as wilderness. Vehicular access to Little Beaver Lake campground would remain, however structures within the proposed wilderness would be removed. Other roads in Beaver Basin would be closed and converted to trails or allowed to revert to natural vegetation. To accommodate possible increased use and to increase ease of access in the portion of the national lakeshore not proposed for wilderness, certain roads would be upgraded (upgrading portions of County Road H-58 would be recommended), and a campground would be added in the Miners area. Operational facilities would be consolidated at the ends of the national lakeshore for efficiency. About 18% of the national lakeshore would be proposed for designation as wilderness.

Among the important impacts of implementing the preferred alternative would be as follows.

- (1) The preservation of and access to the museum collection and greater protection for the national lakeshore's cultural resources than under the no-action alternative.
- (2) The overall maintenance of wilderness values by law in perpetuity.
- (3) Some benefits from expenditures of about \$50 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy; some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.

- (4) Reduced motorboating opportunities, additional or improved recreational opportunities, and possibly reduced opportunities for primitive driving experiences.
- (5) Improved opportunities to visit more lakeshore features in a given length of time, but possible crowding in certain areas at times.
- (6) Reduced opportunities to go to Twelvemile Beach via motorized boats adjacent to the recommended wilderness area.
- (7) Possible changes in County Road H-58's scenic character.
- (8) Improved access for visitors and staff with disabilities.

### ALTERNATIVE A

In alternative A management of the national lakeshore would be very similar to existing management with a few exceptions. Administration and maintenance functions would be consolidated in new facilities near Munising and Grand Marais. A new campground would be provided in the Miners area, and paving County Road H-58 from Munising to Grand Marais would be recommended. Facilities would continue to be concentrated at the ends, while the central portion of the national lakeshore would be preserved in a relatively primitive, undisturbed state. The lakeshore would continue to be restored to as natural a state as possible. Natural ecological processes would be allowed to occur, and restoration programs would be initiated where necessary. National lakeshore managers would place few additional limits on visitor use, thus visitation could increase throughout most of the national lakeshore. No wilderness would be proposed for designation.

Among the important impacts of implementing alternative A would be as follows.

- (1) The preservation of and access to the museum collection and greater protec-

tion for the national lakeshore's cultural resources than under the no-action alternative.

- (2) Lands managed under the primitive prescription would ensure slightly improved overall wilderness values; however, these values would not be guaranteed by law in perpetuity.
- (3) Some benefits from expenditures of about \$37 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy; some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.
- (4) Additional opportunities for camping and touring historic resources and possibly reduced opportunities for primitive driving experiences.
- (5) Improved opportunities to visit more lakeshore features in a given length of time, but possible crowding in certain areas at times.
- (6) Continued intrusions on visitor experiences by man-made noise.
- (7) Continued access (motorized and nonmotorized boats) to cliffs and beaches on the Lake Superior shoreline.
- (8) Possible changes in County Road H-58's scenic character.
- (9) Improved access to facilities for people with disabilities.

### ALTERNATIVE B

Alternative B was dropped from consideration.

### ALTERNATIVE C

The national lakeshore would be an easier and more convenient place to visit in alternative C. Vehicular access and/or improved pedestrian

## SUMMARY

access would be provided to additional lake-shore areas, features, and significant cultural resources. Many roads would be paved or improved (paving County Road H-58 would be recommended) to increase ease of access for visitors. Facilities and infrastructure would be improved at some drive-in campgrounds. Selected cultural landscapes would be restored and interpreted. An overlook in the Sevenmile Creek area, one of the most spectacular vistas in the national lakeshore, would be added contingent on the state donating an easement across about 240 acres of their land and the acquisition of an easement on about 10 acres from ForestLand Group, Limited Liability Corporation. Operational and administrative facilities would be consolidated near Munising and Grand Marais for efficiency. Natural ecological processes would be allowed to occur, and restoration programs would be initiated where necessary. No wilderness would be proposed for designation.

Among the important impacts of implementing alternative C would be as follows.

- (1) The preservation of and access to the museum collection and greater protection for the national lakeshore's cultural resources than under the no-action alternative.
- (2) Lands managed under the primitive prescription would ensure slightly improved overall wilderness values; however, these values would not be guaranteed by law in perpetuity.
- (3) Some benefits from expenditures of about \$74 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy; some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.

- (4) New facilities (e.g., campground and roads), but possibly a lost opportunity for a long, primitive driving experience.
- (5) Visitors could visit more lakeshore features in a given period of time than under the no-action alternative, but certain areas could be crowded at times.
- (6) Continued intrusions on visitor experiences by man-made noise.
- (7) Continued motorized and nonmotorized boat access to Lake Superior cliffs and beaches.
- (8) Possible changes in County Road H-58's scenic character.
- (9) Improved access to facilities for people with disabilities.

## ALTERNATIVE D

Alternative D was used as the basis for the preferred alternative.

## ALTERNATIVE E

Much of the middle third of the national lakeshore would be proposed for designated wilderness in alternative E. Beaver Basin, Chapel Basin, and adjacent areas would be included in the wilderness proposal, maximizing opportunities for nonmotorized recreation such as hiking and backcountry camping in a relatively remote, quiet, natural area. Within the proposed wilderness portion of the lakeshore, structures would be removed and roads would be converted to trails or closed and allowed to revert to natural vegetation. To accommodate possible increased use in the nonwilderness portion of the national lakeshore, certain roads would be upgraded (upgrading portions of County Road H-58 would be recommended), and a new campground would be added in the Miners area. Operational facilities would be consolidated near Munising and Grand Marais for efficiency. Some cultural and natural features at the east and west portions of the lakeshore would be easier to get to and have more

facilities and amenities than now. Natural ecological processes would be allowed to occur, and restoration programs would be initiated where necessary. About 25% of the national lakeshore would be proposed for designation as wilderness.

Among the important impacts of implementing alternative E would be as follows:

- (1) The preservation of and access to the museum collection and greater protection for the national lakeshore's cultural resources than under the no-action alternative.
- (2) Enhanced wilderness values that would be preserved by law in perpetuity.
- (3) Some benefits from expenditures of about \$37 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy; some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.
- (4) Restricting tour boat operation between Miners Beach and Chapel Beach might affect the economic viability of tour boat operations.
- (5) The loss of some motorboating opportunities, but additional or improved recreational opportunities (a new drive-in campground and hiking trails) and opportunities to visit and learn about historic resources).
- (6) Possibly less opportunities for primitive driving experiences.
- (7) Less motorized boat access to primary features
- (8) Reduced intrusions on visitor experiences from man-made noise.
- (9) Lost opportunities to get close-up views of cliffs and beaches from a tour boat or other motorboat.
- (10) Possible changes in County Road H-58's scenic character.

- (11) Improved access to facilities for people with disabilities.

## THE NEXT STEPS

After the distribution of the *Draft General Management Plan and Wilderness Study Environmental Impact Statement* there will be a 90-day review and comment period. After public review the NPS planning team will evaluate comments from other federal agencies, tribes, organizations, businesses, and individuals regarding the draft plan and incorporate appropriate changes into a *Final General Management Plan and Wilderness Study Environmental Impact Statement*. The final plan will include substantive comments on the draft document and NPS responses to those comments. After a 30-day no-action period, a record of decision approving a final plan will be signed by the NPS regional director. With the signing of the record of decision, the plan can then be implemented, depending on funding and staffing. (A record of decision does not guarantee funds and staff for implementing the approved plan.) If the record of decision includes lands that are being recommended for designation as wilderness, another approval process, described below, is set in motion.

## THE WILDERNESS STUDY — WHAT IT MEANS AND HOW IT IS APPROVED

The Wilderness Act of 1964 (Public Law 88-577) established a national wilderness preservation system to “secure for the American people of present and future generations the benefits of an enduring resource of wilderness.

A wilderness ...is...an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness ... (1) generally appears to have been affected primarily by the forces

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of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

If lands are approved as wilderness in the record of decision, a wilderness proposal would be prepared from the director of the National Park Service to the Department of the Interior (Assistant Secretary's Office) as "proposed" wilderness. This proposed wilderness recommendation will identify national lakeshore lands that are being

recommended for immediate wilderness designation, as well as any other lands identified as "potential" wilderness (see glossary).

The secretary of the interior reviews the NPS proposed wilderness and either approves or revises the proposal, and the result is forwarded to the president for his consideration. The president is then responsible for transmitting his recommendations to both houses of Congress (accompanied by maps and boundary descriptions). After the president's formal transmittal of the secretary's wilderness recommendation to Congress, Congress may enact the legislation needed to include the area within the national wilderness preservation system as "designated" and/or "potential" wilderness.

## A GUIDE TO THIS DOCUMENT

This document contains the *General Management Plan*, which is a long-term framework for making management decisions, and a *Wilderness Study*, which explores alternatives for wilderness designation. The environmental impact statement portion of the document assesses the impacts for both the *General Management Plan* and the *Wilderness Study*.

This draft *General Management Plan and Wilderness Study / Environmental Impact Statement* is organized in accordance with the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act and the National Park Service's Director's Orders on "Park Planning" (DO-2), "Environmental Analysis" (DO-12) and "Wilderness Preservation and Management" (DO-41).

**Chapter 1: The Purpose of and Need for Action** sets the framework for the entire document. It describes why the plan is being prepared and what needs it must address. It gives guidance for the alternatives that are being considered. The alternatives are based on the national lakeshore's legislated mission, its purpose, the significance of its resources, special mandates and administrative commitments, and servicewide mandates and policies. A change in NPS wilderness policies allows lands within the national lakeshore to be considered for wilderness study. This general management plan process provides the opportunity to conduct the wilderness study in accordance with the Wilderness Act and NPS management policies.

The chapter also details the planning opportunities and issues that were raised during public scoping; the alternatives in the next chapter address these issues and concerns to varying degrees. This chapter concludes with a section describing impact topics considered in the environmental

impact statement and impact topics dismissed from further consideration.

**Chapter 2: Alternatives, Including the Preferred Alternative**, begins by describing the management prescriptions that will be used to manage the national lakeshore in the future. It also describes the existing management in the national lakeshore (the no-action alternative). The five alternatives are then presented, one of which is the National Park Service's preferred alternative. Alternatives A, C, and E are similar to the alternatives that were presented to the public in the May 2000 newsletter 3. Alternative B was dropped from consideration after public review. The preferred alternative presented in this document used the concept of alternative D presented in newsletter 3 as a foundation and pulled elements from other alternatives to strengthen the preferred alternative and respond to public comments. The preferred alternative and alternative E present different opportunities to set aside some of the national lakeshore as wilderness. The possible mitigation of the impacts of some proposed actions is described. The chapter concludes with summary tables of the alternative actions and their environmental consequences.

**Chapter 3: The Affected Environment** describes those areas and resources that would be affected by implementing actions in the various alternatives—cultural resources, natural resources, socioeconomic resources, and visitor use and experience.

**Chapter 4: Environmental Consequences** analyzes the impacts of implementing the alternatives on topics described in the "Affected Environment" chapter. Methods for assessing the impacts in terms of the intensity, type, and duration of impacts are outlined.

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**Chapter 5: Consultation and Coordination** describes the history of the current planning effort and lists agencies and organizations that will be asked to review this document.

The **Appendixes** present supporting information for the document, along with references, a glossary, and a list of the planning team and other consultants.

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Chapter 1

**PURPOSE OF  
AND  
NEED FOR  
THE  
PLAN**





## BRIEF DESCRIPTION: PICTURED ROCKS NATIONAL LAKESHORE

### THE REGION

Pictured Rocks National Lakeshore is in the north-central section of the Upper Peninsula of Michigan along the south shore of Lake Superior (see Region map). Hiawatha National Forest, Seney National Wildlife Refuge, Grand Island National Recreation Area and numerous state forests and parks have been established in the vicinity of the national lakeshore. Several Canadian parks are along the northern shore of the lake. National park system units in the region include Voyageurs National Park in northern Minnesota; Apostle Islands National Lakeshore in Wisconsin; Isle Royale National Park, Keweenaw National Historical Park (northwestern Lake Superior), and Sleeping Bear Dunes National Lakeshore (on the northeastern shore of Lake Michigan) in Michigan; and Indiana Dunes National Lakeshore in Indiana (at the southern tip of Lake Michigan).

Pictured Rocks National Lakeshore is within a day's drive of the major metropolitan areas of Minneapolis-St. Paul, Madison, Milwaukee, Chicago, Lansing, and Detroit. Substantial towns near the national lakeshore include Sault St. Marie, Marquette, and Escanaba. Airports are at each of these localities. Major interstate and state roads lead to the Upper Peninsula and the national lakeshore from these cities and towns. The main tourist attractions of the Upper Peninsula are the outstanding natural resources, associated recreational opportunities, and historic sites and communities.

### THE SETTING

Pictured Rocks National Lakeshore extends 42 miles along the south shore of Lake Superior between the communities of Munising and Grand Marais (see Vicinity

map). It is known for the spectacular multicolored sandstone cliffs (Pictured Rocks) that extend about 12 miles along Lake Superior in the western portion of the national lakeshore and attain a height of almost 200 feet. The eastern portion of the lakeshore contains the perched Grand Sable Dunes, which rise more than 300 feet above the lake. The dunes, a major lakeshore attraction, are a rare occurrence in the Great Lakes region and contain uncommon plant species and communities.

In addition to the Pictured Rocks, the national lakeshore offers other recreational attractions. Numerous picturesque waterfalls cascade over the Pictured Rocks and the inland escarpment. Lake Superior and the inland lakes accommodate boating, fishing, and swimming, and remote backcountry areas such as Beaver and Chapel basins are ideal for camping and hiking. Also, the lakeshore has a variety of cultural resources that depict the maritime, iron, logging, and American Indian histories of the area. Winter activities include ice fishing, snowshoeing, cross-country skiing, and snowmobiling.

County Road H-58 provides access to the national lakeshore. It is administered, maintained, and improved by Alger County.

### THE NATIONAL LAKESHORE

Pictured Rocks was recognized as a potential outstanding public recreation site at least as far back as 1924, when the Michigan Conservation Commission created a state park at Miners Castle. As with so many conservation projects, the lack of funding prevented acquisition of important acreage.

The National Park Service, after conducting a Great Lakes shoreline recreation area survey in 1957-58, identified Pictured Rocks as one of

five areas that contained features of national significance. It was recommended for consideration as an addition to the national park system, and planning for the national lakeshore began.

Pictured Rocks National Lakeshore was established October 15, 1966 by Public Law (PL) 89-668 to “preserve for the benefit, inspiration, education, recreational use, and enjoyment of the public, a significant portion of the diminishing shoreline of the United States and its related geographic and scientific features ...” (see appendix A).

The national lakeshore encompasses 71,397 acres. The enabling legislation established an inland buffer zone within the national lakeshore.

The shoreline zone (33,548 acres, all in federal ownership) is to be managed to preserve its scenery and outstanding natural features.

The inland buffer zone (37,849 acres that are a mixture of private and governmental ownership) was established by Public Law 89-668 (October 15, 1966), Section 9(a) to “stabilize and protect the existing character and uses of the lands, waters, and other properties within such zone for the purpose of preserving the setting of the shoreline and lakes, protecting its watershed and streams, and providing for the fullest economic utilization of the renewable resources through sustained yield timber management and other resource management compatible with the purposes of this Act.” The ForestLand Group, Limited Liability Corporation (about 17,500 acres) and the state of Michigan (13,824 acres) own most of the land in the inland buffer zone. The remaining land in the inland buffer zone is owned by private landowners (2,016 acres), or by the National Park Service (2,055 acres). Local zoning regulates the density, type, location, and character of private development in the inland buffer zone. Alger County, Burt Township, and the city of Munising

maintain the authority to regulate land use on all private lands in the inland buffer zone. Protection through local zoning allows for reasonable use of private land, including harvesting of timber, and will help to protect the lakeshore’s natural and cultural resources by controlling the intensity and locations of appropriate uses.

The 17,000 acres in the inland buffer zone owned by Kamehameha Schools is being sold to the ForestLand Group Limited Liability Corporation. On-the-ground management of these lands and resources may change as a result of this new ownership.

## RELEVANT LEGISLATION AND POLICIES

The enabling legislation for the national lakeshore directed the National Park Service to construct a scenic shoreline drive. Title II, Section 202 of PL 105-378 amended the enabling legislation for the national lakeshore and required that the secretary of the interior include specific provision for the development of facilities to provide the benefits of public recreation, including appropriate improvements to Alger County Road H-58. The amendment also prohibits the development of a scenic shoreline drive in Pictured Rocks National Lakeshore.

Director’s Order 41, “Wilderness Preservation and Management,” allows consideration of wilderness designation in areas with outstanding mineral rights only if it is likely that those mineral rights will never be exercised. The written agreement between Cleveland Cliffs Iron Company (on land now owned by the ForestLand Group, Limited Liability Corporation) and the National Park Service would most likely preclude mineral exploration or development within the lakeshore.

Region

map

1 page

back of map

Vicinity

map

1 page

back of map

## PURPOSE OF AND NEED FOR THE PLAN AND WILDERNESS STUDY

### PURPOSE OF THE PLAN

The approved *General Management Plan* will be the basic document for managing Pictured Rocks National Lakeshore for the next 15 years. The purposes of this general management plan are as follows:

- Clearly define resource conditions and visitor experiences to be achieved in Pictured Rocks National Lakeshore.
- Provide a framework for national lakeshore managers to use when making decisions about such issues as how to best protect national lakeshore resources, how to provide a quality visitor experience, how to manage visitor use, and what kinds of facilities, if any, to develop in the national lakeshore.
- Ensure that this foundation for decision making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

Legislation establishing the National Park Service as an agency and governing its management provides the fundamental direction for the administration of Pictured Rocks National Lakeshore (and other units and programs of the national park system). This general management plan will build on these laws and the legislation as amended that established Pictured Rocks National Lakeshore to provide a vision for the lakeshore's future. The "Servicewide Mandates and Policies" section calls the reader's attention to topics that are important to understanding the management direction at the national lakeshore. Table 1 summarizes the topic and the condition to which management is striving. Appendix B gives more detail on the law or

policy directing management actions. The alternatives in this general management plan address the desired future conditions that are not mandated by law and policy and must be determined through a planning process.

### NEED FOR THE PLAN

This new management plan for Pictured Rocks National Lakeshore is needed because the last comprehensive planning effort for the national lakeshore was completed in 1981. Much has occurred since then – patterns and types of visitor use have changed, the national lakeshore boundary was amended in 1996 to add the former Coast Guard property in Grand Marais, the development of a scenic drive has been prohibited by recent legislation, and revised NPS management policies allow us to examine the potential for recommending some of the lakeshore's lands and waters for designation as wilderness. Each of these changes has major implications for how visitors access and use the lakeshore, the facilities needed to support those uses, how resources are managed, and how the National Park Service manages its operations.

The general management plan represents a commitment by the National Park Service to the public on how the national lakeshore will be used and managed. As such, it is intended to

- Confirm the mission, purpose, and significance of the national lakeshore.
- Determine the best mix of resource protection and visitor experiences beyond what is prescribed by law and policy. This mix is based on the mission, purpose, and significance statements for the national lakeshore, the range of public expectations and concerns, the natural and cultural resources in the national lakeshore, the impacts of the alternatives on natural,

cultural, and socioeconomic conditions; impacts on visitor use and experience, and long-term economic considerations and costs.

- Define management prescriptions that implement the goals of the National Park Service and the public with regard to natural and cultural resource management and protection and visitor use and experience. Facilities that are appropriate within each management prescription are also identified.
- Determine the areas to which the management prescriptions should be applied to achieve the overall management goals of the national lakeshore.
- Assist NPS staff in determining whether actions proposed by the National Park Service or others are consistent with the goals embodied in the approved general management plan.
- Serve as the basis for later more detailed management documents, such as five-year strategic plans and implementation plans.

The general management plan does not describe how particular programs or projects should be prioritized or implemented. Those decisions will be addressed during the more detailed planning associated with strategic plans, implementation plans, etc. All of those plans will be based on the goals, future conditions, and appropriate types of activities established in the approved general management plan.

A general management plan also is needed to meet the requirements of the National Parks and Recreation Act of 1978 and NPS policy, which mandate development of a general management plan for each unit in the national park system.

## PURPOSE OF THE WILDERNESS STUDY

A wilderness study evaluates if lands and waters in a national park system unit are appropriate for designation as wilderness. Two of the alternatives (the preferred alternative and alternative E) explore wilderness options for the national lakeshore Elements of the wilderness study, which have been integrated into this document, are supported by appropriate documentation of compliance with the National Environmental Policy Act and the National Historic Preservation Act.

## NEED FOR THE WILDERNESS STUDY

NPS *Management Policies* at the time of the 1981 planning effort precluded wilderness consideration on areas where the federal government did not control the underground mineral rights, which was the case at Pictured Rocks National Lakeshore. Therefore, wilderness suitability was not evaluated for the national lakeshore.

However, recently revised NPS *Management Policies* allow consideration of wilderness eligibility and designation on lands owned by the federal government with outstanding mineral rights. The written agreement between Cleveland Cliffs Iron Company (land subsequently purchased by the Kamehameha Schools and now being sold to the ForestLand Group, Limited Liability Corporation) and the National Park Service would most likely preclude mineral exploration or development in the national lakeshore. This is a deed restriction that stays with the property.

The Beaver Basin and Chapel Basin areas were found to possess wilderness characteristics. NPS management policies provide that the national lakeshore should prepare a wilderness study for lands and waters found to have the characteristics and values of wilderness as defined in the Wilderness Act. The study can also be used to develop the recommendation to Congress for designation

as part of the national wilderness preservation system.

The National Park Service is taking advantage of the opportunity provided by the general management plan / environmental impact statement process to complete the required wilderness study. If appropriate, depending on the findings and conclusions of this wilderness study, the National Park Service

will prepare a wilderness proposal (to forward to the Department of the Interior). Lands proposed for designation as wilderness are required by NPS management policies to be managed as wilderness until designation by Congress. Therefore, the question of wilderness at Pictured Rocks requires resolution so that NPS staff may move ahead in managing land within its jurisdiction.

## GUIDANCE FOR THE PLANNING EFFORT

### MISSION, PURPOSE, AND SIGNIFICANCE STATEMENTS

Mission statements describe the desired future conditions for the national lakeshore that exist when the legislative intent is being met. The National Park Service mission, as stated in the 1916 Organic Act, is “to conserve the scenery and the natural and historic objects and the wildlife therein and provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”

#### *Mission*

Pictured Rocks National Lakeshore is dedicated to

- preserving a nationally significant portion of the Great Lakes shoreline
- allowing public access to its geologic, scientific, and historic features
- offering opportunities for recreation, education, inspiration, and enjoyment

National lakeshore purpose statements are based on national lakeshore legislation and legislative history, and NPS policies. The statements reaffirm the reasons for which the national lakeshore was set aside as a unit of the national park system, and provide the foundation for national lakeshore management and use.

#### *Purpose*

The purpose of Pictured Rocks National Lakeshore is to

- preserve a portion of the Great Lakes shoreline for its geographic, scientific, scenic, and historic features, and its associated ecological processes

- provide opportunities for public benefit in recreation, education, enjoyment, and inspiration
- protect the character and use of the shoreline zone while allowing economic utilization of the inland buffer zone’s renewable resources

National lakeshore significance statements capture the essence of the national lakeshore’s importance to our country’s natural and cultural heritage. Significance statements do not inventory national lakeshore resources; rather, they describe the national lakeshore’s distinctiveness and help to place the national lakeshore within its regional, national, and international contexts. Defining national lakeshore significance helps managers make decisions that preserve the resources and values necessary to accomplish Pictured Rocks National Lakeshore’s purpose.

#### *Significance*

The significance of Pictured Rocks National Lakeshore is

- Pictured Rocks National Lakeshore preserves and affords public access to a spectacular and diverse segment of the Lake Superior shoreline.
  - Unmatched in their scenic value, the 200-foot high Pictured Rocks cliffs rise perpendicularly from Lake Superior, creating a rock mosaic of form, color, and texture, which is enhanced by cascading waterfalls.
  - Grand Sable Dunes, perched atop 300-foot high sand banks above Lake Superior, are one of two perched dune systems on the Great Lakes; within these dunes are unique plant communities resulting from geomorphic processes.

- Twelve miles of unspoiled and undeveloped Lake Superior beach contrast the Pictured Rocks cliffs and Grand Sable Dunes.
- Bedrock geology and glacial landforms provide significant topographic relief marked by streams, inland lakes, and a diversity of associated vegetation.
- The shoreline offers extraordinary and inspirational scenic vistas of Lake Superior, the largest surface area of fresh water on earth.
- Pictured Rocks National Lakeshore offers a variety of affordable year-round recreational opportunities for appropriate public use.
- The lakeshore contains a spectrum of cultural resources focused on the human use of Lake Superior and its shoreline.
- Lying in a transition zone between boreal and eastern hardwood forest, the lakeshore's scientifically recognized assemblage of flora and fauna is representative of associations unique to the Lake Superior Basin.
- Pictured Rocks is the only NPS area with a legislated buffer zone.

## **SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS**

Special mandates and administrative commitments refer to lakeshore-specific requirements. These formal agreements are often established concurrently with the creation of a unit of the national park system. These include the following:

Title II, Section 202, Public Law 105-378 requires the agency to include "appropriate improvements" to Alger County Road H-58 as part of agency provisions for public use facilities and prohibits the development of a

scenic shoreline drive required in the enabling legislation.

The harvesting of renewable resources on a sustained yield basis – principally timber – is to be permitted within the inland buffer zone of the national lakeshore (Public Law 89-668, Sections 9 and 10).

The national lakeshore is the only national park system unit with a legislated inland buffer zone. Pursuant to the national lakeshore's enabling legislation, interpretation of natural and cultural resources will occur in the inland buffer zone and focus on the unique relationships between resources and processes within the national lakeshore boundary.

Hunting and fishing are to be permitted in the national lakeshore in accordance with Michigan hunting and fishing regulations, however, "zones and ... periods" may be designated as no hunting for "reasons of public safety, administration, or public use and enjoyment." Such closures can take place following consultation with the Michigan Department of Natural Resources (Public Law 89-668, Section 5).

Mineral rights in the national lakeshore are held by the Michigan Department of Natural Resources, ForestLand Group, Limited Liability Corporation, and other private and corporate owners. When Cleveland Cliffs Iron Company sold land to the government, they reserved mineral rights subject to an agreement with the National Park Service covering methods of mineral extraction within the national lakeshore. The agreement precludes milling or processing facilities from being constructed on lands in the inland buffer zone or on lands in the shoreline zone where Cleveland Cliffs Iron Company retained mineral rights. When the Kamehameha Schools purchased the land from Cleveland Cliffs Iron Company the provisions of the agreement transferred with the title. ForestLand Group, Limited Liability Corporation recently purchased the land from the Kamehameha

Schools and the provisions transferred with the title to the property. The agreement precludes waste dumps, tailing deposits, and stockpiling of extracted material on the surface of shoreline zone lands. These activities are also precluded in the inland buffer zone except by written consent of the director of the National Park Service.

The state has granted a perpetual easement to the National Park Service for maintenance and visitor access purposes for a portion of the Chapel Road. An additional easement has been granted to the National Park Service for communication purposes (Buck Hill fire tower).

The National Trails System Act (Public Law 90-543) states that national scenic trails are located to “provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass.” Pictured Rocks National Lakeshore contains a segment of the North Country National Scenic Trail, which was added to the National Trails System on March 5, 1980. The North Country National Scenic Trail will continue to be managed in a way that supports the directions given in the National Scenic Trails Act and the North Country National Scenic Trail’s *Comprehensive Management Plan* (NPS 1982).

The national lakeshore issues special use permits. Special use permits have been issued to Alger County Parks and Recreation Department to place a volleyball net at Sand Point Beach, for an annual sea kayak symposium held within the national lakeshore lands and waters, to ForestLand Group, Limited Liability Corporation, for access across NPS lands to move logging equipment and haul forest products in the inland buffer zone, and for the annual Michigan Ice Festival.

The national lakeshore maintains incidental business permits, which allow private business

owners the opportunity to conduct commercial operations within the national lakeshore. These commercial activities include backpacking, ice climbing, sea kayaking, hiking, cross-country skiing, scenic boat tours, and snowshoeing.

There are cooperative mutual aid fire agreements with Hiawatha National Forest, Michigan Department of Natural Resources, and Seney National Wildlife Refuge. NPS law enforcement staff cooperates with the Michigan State Police, Alger County Sheriff’s Department, Michigan Department of Natural Resources, and the Munising City Police. There is a cooperative agreement between the national lakeshore and Burt Township Ambulance Corps for emergency medical services. The national lakeshore also has an Inter-agency Agreement with Hiawatha National Forest for joint operation of the visitor center.

## SERVICEWIDE MANDATES AND POLICIES

This section identifies what must be done at Pictured Rocks National Lakeshore to comply with federal laws and with the policies of the National Park Service. Many park management directives are specified in laws and policies guiding the National Park Service and are therefore not subject to alternative approaches. For example, there are laws about managing environmental quality (such as the Clean Air Act and the Endangered Species Act); laws governing the preservation of cultural resources (such as the National Historic Preservation Act); and laws about providing public services (such as the Americans with Disabilities Act). A general management plan is not needed to decide, for instance, that it is appropriate to protect endangered species, control exotic species, protect archeological sites, provide for barrier-free access, and conserve artifacts.

Many of the laws and executive orders that guide national lakeshore management, with

their legal citations, are identified in appendix C. Some of these laws and executive orders are applicable solely or primarily to units of the National Park Service. These include the 1916 Organic Act creating the National Park Service, the General Authorities Act of 1970, and the act of March 27, 1978, relating to the management of the national park system. Others have much broader application, such as the Endangered Species Act, the National Historic Preservation Act, and Executive Order 11990 addressing the protection of wetlands.

The NPS Organic Act (16 U.S.C. § 1) provides the fundamental management direction for all units of the national park system:

promote and regulate the use of the Federal areas known as national parks, monuments, and reservations...by such means and measures as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

The National Park System General Authorities Act (16 U.S.C. § 1a-1 *et seq.*) affirms that while all national park system units remain “distinct in character,” they are “united through their interrelated purposes and resource into one national park system as cumulative expressions of a single national heritage.” The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Further, amendments state that NPS management of park units should not “derogate...the purposes and values for which these various areas have been established.”

The NPS Organic Act and the General Authorities Act prohibit any impairment of

park resources. NPS 2001 *Management Policies* (Section 1.4 *et seq.*) state that an impact would be

more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: (1) necessary to fulfill a specific purpose identified in the establishing legislation or proclamation of the park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in the park’s general management plan or other relevant NPS planning documents.

The National Park Service also includes the park’s role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system among the values that are subject to the no impairment standard. Finally, unless the activity is required by statute, the National Park Service cannot allow an activity in a park if it would involve or result in the following:

- Would impair park resources or values;
- Create an unsafe or unhealthful environment for other visitors or employees;
- Are contrary to the purposes for which the park was established; or
- Unreasonably interfere with:
  - the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park;
  - NPS interpretive, visitor service, administrative, or other activities;
  - NPS concessioner or contractor operations or services; or
  - other existing, appropriate park uses.

For these reasons, Chapter 4 of this *General Management Plan and Wilderness Study*

*Environmental Impact Statement* provides an analysis of the potential of each alternative to leave park resources and values unimpaired relative to existing and future operations.

The National Park Service also has established policies for all units under its stewardship. These are identified and explained in *NPS Management Policies* (NPS 2001). The alternatives considered in this document incorporate and comply with the provisions of these mandates and policies.

To truly understand the implications of an alternative, it is important to combine the servicewide mandates and policies with the

management actions described in an alternative.

Below are some of the key servicewide mandates and policy topics that the national lakeshore staff are implementing at Pictured Rocks National Lakeshore. Across from each topic are the desired conditions that the staff is striving to achieve for that topic. The table is written in the present tense to describe desired conditions as if they have already been achieved. Appendix B expands on this information by citing the source of the mandate and examples of the types of actions currently being pursued by national lakeshore staff.

TABLE 1: SERVICEWIDE MANDATES AND POLICIES PERTAINING TO THE NATIONAL LAKESHORE

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at the National Lakeshore
<p><b>Relations with National Lakeshore Neighbors</b></p>	<p>The national lakeshore is managed as part of a greater ecological, social, economic, and cultural system.</p> <p>Because the national lakeshore is an integral part of a larger regional environment, the National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts, protect national lakeshore resources, and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, Indian tribes, neighboring landowners, and all other concerned parties.</p>
<p><b>Air Quality</b></p>	<p>Air quality in the national lakeshore meets national ambient air quality standards (NAAQS) for specified pollutants.</p> <p>Activities in the national lakeshore do not contribute to deterioration in air quality.</p>
<p><b>Water Resources</b></p>	<p>Surface waters and groundwaters are protected and water quality meets or exceeds all applicable water quality standards.</p> <p>NPS programs and facilities are maintained and operated to avoid pollution of surface waters and groundwater.</p> <p>Natural floodplain values are preserved.</p> <p>The natural and beneficial values of wetlands are preserved and enhanced.</p>
<p><b>Geologic Resources</b></p>	<p>Natural soil resources and processes function in as natural a condition as possible, except where special management considerations are allowable under policy.</p>
<p><b>Invasive Species</b></p>	<p>“Native species” are defined as all species that have occurred or now occur as a result of natural processes on lands designated as units of the national park system. Native species in a place are evolving in concert with each other. “Exotic species” are those species that occupy or could occupy park lands directly or indirectly as the result of deliberate or accidental human activities. Exotic species are also commonly referred to as non- native, alien, or invasive species. Because an exotic species did not evolve in concert with the species native to the place, the exotic species is not a natural component of the natural ecosystem at that place.</p>
<p><b>Managing Biological Resources</b></p>	<p>The National Park Service maintains all native plants and animals as parts of the national lakeshore’s natural ecosystems. The term “plants and animals” refers to all five of the commonly recognized kingdoms of living things(including such groups as flowering plants, ferns, mosses, lichens, algae, fungi, bacteria, mammals, birds, reptiles, amphibians, fishes, insects, worms, crustaceans, and microscopic plants or animals).</p>
<p><b>Species of Concern</b></p>	<p>Federal and state-listed threatened and endangered species and their habitats are protected and sustained.</p> <p>Populations of native plant and animal species function in as natural condition as possible except where special considerations are warranted.</p> <p>Native species populations that have been severely reduced in or extirpated from the national lakeshore are restored where feasible and sustainable.</p> <p>The management of populations of exotic plant and animal species, up to and including eradication, will be undertaken wherever such species threaten national lakeshore resources or public health and when control is prudent and feasible.</p>
<p><b>Fire Management</b></p>	<p>All wildfires are suppressed or controlled as soon as possible.</p>
<p><b>Night Sky</b></p>	<p>The National Park Service cooperates with national lakeshore neighbors and local government agencies to help minimize the intrusion of artificial light into the night sky in the national lakeshore. Artificial outdoor lighting is limited to basic safety requirements and is shielded when possible.</p>

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at the National Lakeshore
<b>Natural Soundscapes</b>	The National Park Service preserves the natural ambient soundscapes, restores degraded soundscapes to the natural ambient condition wherever possible, and protects natural soundscapes from degradation due to human-caused noise. The National Park Service manages disruptions from recreational uses to provide a high-quality visitor experience, striving to preserve or restore the natural quiet and natural sounds.
<b>Archeological Resources</b>	<p>Archeological sites are identified and inventoried, and their significance is determined and documented.</p> <p>Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable.</p> <p>In those cases where disturbance or deterioration is unavoidable, the site is professionally documented and salvaged.</p>
<b>Ethnographic Resources</b>	<p>Appropriate cultural anthropological research is conducted in cooperation with national lakeshore-associated groups.</p> <p>The National Park Service accommodates access to and ceremonial use of American Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites.</p> <p>NPS general regulations on access to and use of natural and cultural resources in the national lakeshore are applied in an informed and balanced manner that is consistent with national lakeshore purposes and does not unreasonably interfere with American Indian use of traditional areas or sacred resources and does not result in the degradation of national lakeshore resources.</p> <p>Other federal agencies, state and local governments, potentially affected American Indian and other communities, interest groups, and the state historic preservation officer are given opportunities to become informed about and comment on anticipated NPS actions at the earliest practicable time.</p> <p>The National Park Service consults with tribal governments before taking actions that affect Indian tribes. These consultations are open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals. National lakeshore staff regularly consult with traditionally associated American Indians regarding planning, management, and operational decisions that affect subsistence activities, sacred materials or places, or other ethnographic resources with which they are historically associated.</p> <p>The identities of community consultants and information about sacred and other culturally sensitive places and practices are kept confidential.</p> <p>American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains are consulted when remains may be disturbed or are encountered on national lakeshore lands.</p>
<b>Historic Properties</b>	Cultural resources are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria. The qualities of historic properties that contribute to their actual listing or their eligibility for listing on the National Register of Historic Places are protected in accordance with the <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> , unless it is determined through a formal process that disturbance or natural deterioration is unavoidable.
<b>Collections</b>	All museum objects and manuscripts are identified and inventoried, and their significance is determined and documented. Collections are protected in accordance with established standards.

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at the National Lakeshore
<b>Visitor Use and Experience</b>	<p>Visitor and employee safety and health are protected.</p> <p>Visitors understand and appreciate national lakeshore values and resources and have the information necessary to adapt to the national lakeshore environments. Visitors have opportunities to enjoy the national lakeshore in ways that leave the resource unimpaired for future generations.</p> <p>Recreational uses in the national lakeshore are promoted and regulated. Basic visitor needs are met in keeping with the national lakeshore purposes.</p> <p>To the extent feasible, facilities, programs, and services in the national lakeshore are accessible to and usable by all people, including those with disabilities.</p>
<b>Sustainable Design/ Development</b>	<p>NPS visitor and management facilities are harmonious with national lakeshore resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy efficient, and cost-effective.</p>

## PLANNING OPPORTUNITIES AND ISSUES

The general public, national lakeshore staff, and other agencies and organizations identified various issues and concerns during scoping for this general management plan. Comments were solicited at public meetings, through planning newsletters, and on the national lakeshore's Web site.

Comments received during scoping demonstrated that there is much that the public likes about the national lakeshore — its management, use, and facilities. The issues and concerns generally involve determining the appropriate visitor use, types and levels of facilities, services, and activities while remaining compatible with desired resource conditions.

The general management plan provides a framework or strategy for addressing the issues within the context of the national lakeshore's purpose, significance, and mission goals; it also proposes resource conditions for both summer and winter use on the land and the water within the lakeshore boundary and desired visitor experiences. The analysis of the impacts that could result from actions proposed in the alternatives is included in chapter 4.

The following issues were identified during the scoping process:

### NATIONAL LAKESHORE ACCESS, CIRCULATION, VISITOR ORIENTATION, AND CARRYING CAPACITY

**Background.** Patterns and types of visitor use have changed since completion of the 1981 *General Management Plan*. For example, sea kayak use on national lakeshore waters — virtually nonexistent in 1981 — occurs today. There is increased interest in motorized use of the public lands. At the same time, there is

concern about the noise and impact on resources and visitors from motorized use of public lands.

Some people wanted more national lakeshore access in general; others wanted access to be restricted. Some people commented that access to the shoreline should be available at more locations. Accessibility for the elderly and visitors with disabilities to the shoreline and specific sites such as the Au Sable Light Station was an issue for many. Also, most people felt either that current numbers of visitors were appropriate or that visitation should be limited or reduced.

**Issue.** Define and provide an appropriate balance of access, circulation, and visitor orientation and use throughout the national lakeshore. Determine an appropriate mix of visitor experiences, resource conditions, and support facilities.

The general management plan will address carrying capacity issues in the national lakeshore by describing desired visitor experiences, resource conditions, and appropriate support facilities through management prescriptions for the national lakeshore. The management plan will not develop standards or indicators for carrying capacity, nor will it develop a monitoring plan; that will be accomplished in a subsequent implementation plan.

### SHORELINE AND INLAND BUFFER ZONE

**Background.** The enabling legislation created two zones within the national lakeshore boundary: the shoreline zone, owned by the federal government and managed by the National Park Service, and the inland buffer zone, a mixture of federal, state, and private ownership. Some people commented favorably on the existing legislated zones. A few

wanted the inland buffer zone to be eliminated. Respondents with residential or commercial interest in the inland buffer zone were concerned about their property rights and values as well as possible NPS restriction on their property and activities. Others said that development and noise-producing activities should be restricted to the inland buffer zone or areas outside of the lakeshore to permit a quieter, more natural experience.

**Issue.** Define how the shoreline zone and inland buffer zone are managed at Pictured Rocks National Lakeshore; identify the uses that are appropriate for each zone.

### COUNTY ROAD H-58

**Background.** This road is the primary access to the national lakeshore. Some respondents wanted Alger County Road H-58 left as it is. Most want some level of improvements (gravel or paving). The majority of those wanting improvements favor a relatively narrow, two-lane, low-speed scenic road with a forest canopy. In conjunction with the authority provided in PL 105-178, (Transportation Equity Act for the 21st Century) the National Park Service has authority to assist Alger County with the improvement of County Road H-58 to ensure continued access to the national lakeshore. The National Park Service has no authority to perform maintenance services on H-58 or to provide funds for maintenance services. However, the National Park Service does have discretionary authority to provide the local matching funds for appropriate H-58 improvement projects for which it has funding authority and available funds.

**Issue.** Determine what level of improvement, if any, is appropriate for County Road H-58.

### WILDERNESS

**Background.** Many people expressed a desire to retain the wilderness character of the national lakeshore but were opposed to a formally designated wilderness primarily because of restrictions on motorized access to the area. Many others supported wilderness as a mechanism to retain the wild character of the central part of the national lakeshore.

**Issue.** Determine what part of the national lakeshore, if any, should be proposed for designation as wilderness.

### DECISION POINTS

Decision points identify the key decisions that still remain to be made after all the mandates are considered. As with any decision-making process, there are key decisions that, once made, will dictate the direction of subsequent decisions. Based on public comments, the issues stated above, and agency concerns for this general management plan, two major resource conditions and visitor experience “decision points” were identified. This general management plan focuses on alternative ways of addressing these decision points.

#### Decision Point 1

Public lands in the Upper Peninsula provide a wide range of visitor opportunities and resource conditions. We need to define Pictured Rocks National Lakeshore’s role and relationship with other public agencies within the Upper Peninsula. Some people want a relatively wild, remote place requiring physical effort to experience it, while others want an easy, convenient place to visit. Others want some mix of these two. **What mix of experiences and resource conditions should Pictured Rocks National Lakeshore offer its visitors?**

## Decision Point 2

There is concern among those commenting regarding what activities and development might occur in the congressionally defined inland buffer zone while still providing the intended protection for the lakeshore zone. **What conditions for resource protection should exist in the inland buffer zone? How do we best manage congressionally authorized resource (timber) extraction, visitor activities, and development in the inland buffer zone so that these conditions are met?**

## ISSUES NOT ADDRESSED IN THE GENERAL MANAGEMENT PLAN

Not all of the issues raised by the public are included in this general management plan. Other issues raised by the public were not considered because they

- were not feasible
- are already prescribed by law, regulation, or policy (see the “Servicewide Mandates and Policies” section)
- would be in violation of laws, regulations, or policies
- were at a level that was too detailed for a general management plan and are more appropriately addressed in subsequent planning documents

This section briefly describes each of these issues, and the basis for excluding them from this general management plan.

- *A suggestion was made to transfer jurisdiction of Grand Island Recreation Area from the U.S. Forest Service to the National Park Service.*  
Congress established the National Recreation Area in 1989 and directed the U.S. Forest Service to manage it. The U.S. Forest Service will continue to manage Grand Island Recreation

Area, therefore, no further options will be explored.

- *A suggestion was made that snowmobiles should be banned from Pictured Rocks National Lakeshore. Some people believe this ban should be implemented throughout the national park system.*  
Snowmobile use is currently allowed only on existing roads within the national lakeshore. The National Park Service is reviewing the policy on snowmobile use within park boundaries on a systemwide basis. Until a servicewide policy decision is developed, snowmobile use will continue on existing roads.
- *A suggestion was made that hunting and logging should be banned from Pictured Rocks National Lakeshore.*  
These uses are permitted within the inland buffer zone of the national lakeshore by the enabling legislation. Hunting is also permitted in the shoreline zone of the national lakeshore by the enabling legislation.
- *A suggestion was made that logging and ORV use should be allowed within the shoreline zone.*  
These uses are prohibited on NPS lands by law.
- *A suggestion was made that trapping should be allowed on federally owned lands within the national lakeshore.*  
Courts have determined that under existing law trapping is not a permissible activity on NPS lands and waters.
- *Suggestions were made that personal watercraft should be banned within the 0.25-mile portion of Lake Superior that is within the national lakeshore boundary to preserve the natural quiet.*  
A suit filed against the National Park Service by a national environmental group led to a court-ordered settlement that personal

watercraft would be banned in all national parks and recreation areas by April 22, 2002, and September 15, 2002, unless the National Park Service can prove that they have adverse impacts. In response to the settlement, an environmental assessment to identify the impacts of personal watercraft at Pictured Rocks National Lakeshore was conducted. The decision was made that personal watercraft would be allowed to launch from a designated launch site (currently Sand Point)

and operate on Lake Superior within the national lakeshore boundary from the western boundary up to the east end of Miners Beach. Personal watercraft users would be allowed to beach their craft on Miners Beach. Personal watercraft would not be allowed to launch or operate elsewhere within the national lakeshore.=

## IMPACT TOPICS – RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS

### IMPACT TOPICS TO BE CONSIDERED

Impact topics allow comparison of the environmental consequences of implementing each alternative. Section 4.4 of Director's Order 12 states, in part,

Pursuant to the National Parks Omnibus Management Act and National Environmental Policy Act, NPS management decisions will be based on ample technical and scientific studies properly considered and appropriate to the decisions made.

These impact topics were identified based on federal laws and other legal requirements, NPS subject-matter expertise and knowledge of limited or easily impacted resources, and concerns expressed by staff of other agencies or members of the public during scoping. A brief rationale for the selection of each impact topic is given below.

#### Cultural Resources

The National Historic Preservation Act, the Archeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, and the National Environmental Policy Act require that the effects of any federal undertaking on cultural resources be examined. Also, NPS *Management Policies*, *Cultural Resource Management Guideline* (Director's Order 28), and NPS *Museum Collections Management Guideline* (DO-24) call for the consideration of cultural resources in planning proposals. Consideration of historic properties is required under the National Historic Preservation Act and is included in the "Servicewide Policies and Mandates" section. Actions proposed in this plan could affect archeological sites, historic

structures, cultural landscapes, ethnographic resources, and museum collections.

#### Natural Resources

**Species of Concern.** Consultation with the U.S. Fish and Wildlife Service and Michigan Department of Natural Resources identified a number of threatened, endangered, or species of concern, which warrants inclusion of this topic in this *General Management Plan and Wilderness Study / Environmental Impact Statement*.

#### Wilderness Resources and Values

Examine lands within the Chapel and Beaver Basins for characteristics that might make them eligible for consideration for wilderness designation.

#### Socioeconomic Resources

The National Environmental Policy Act requires an examination of social and economic impacts caused by federal actions. Alger County, and the cities of Munising and Grand Marais in particular, and other visitor service facilities and operators (e.g., tour boats, restaurants, and hotels) could be affected by actions proposed in this management plan. Impact topics include effects on the local economy and the county tax base.

#### Visitor Use and Experience

Providing for visitor enjoyment, understanding and stewardship is one of the fundamental purposes of the National Park Service. Many actions proposed in this management plan could affect patterns of visitor use and

the type and quality of visitor experiences. Visitor access, orientation and interpretation, recreation, and visitor services (including camping and lodging) are specific elements of the visitor experience; however, the impacts in other topic areas could also directly affect visitor experience. Some actions proposed in this plan will impact the visitor experience. Impact topics include opportunities for recreational activities, access to primary national lakeshore features, noise, scenic character of County Road H-58, and opportunities for visitors with disabilities.

### **National Lakeshore Operations and Facilities**

The alternatives proposed in this plan could affect NPS operations and facilities in the national lakeshore. Topics include operations, facilities, operational efficiency and emergency response time, and administrative access to the museum collection.

### **IMPACT TOPICS DISMISSED FROM FURTHER CONSIDERATION**

Some impact topics that commonly are considered during the planning process were not relevant to this general management plan for Pictured Rocks National Lakeshore due to the following: (a) implementing the alternatives would have no discernible effect on the topic or resource or (b) the resource does not occur in the national lakeshore. These topics are as follows:

#### **Sacred Sites**

According to Executive Order 13007 on “Indian Sacred Sites” (1996) the National Park Service will accommodate, to the extent practicable, access to and ceremonial use of Indian sacred sites by religious practitioners from recognized American Indian and Alaska native tribes and would avoid adversely

affecting the physical integrity of such sacred sites. According to the study “Traditional Ojibway Resources in the Western Great Lakes” (draft; see the “Cultural Resources” section in the “Affected Environment” chapter of this document) several Ojibway tribes, including the Chippewa Tribe, have a cultural affiliation with lands in the national lakeshore, and some of these lands continue to be of spiritual and religious significance to the Chippewas. None of known sites that may potentially be important to the tribes would be affected by actions proposed in the alternatives in this document. Therefore, the impacts on sacred sites will not be analyzed.

#### **Indian Trust Resources**

The lands comprising Pictured Rocks National Lakeshore are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, this topic was not analyzed.

#### **Coastal Processes**

None of the management prescriptions or actions described in the alternatives would interfere with natural coastal processes. Shoreline stabilization has been required at Sand Point and Grand Marais to protect historic properties or other structures, and may be required in the future. Such stabilization would have no broad effects on coastal processes, either in or outside the lakeshore.

#### **Coastal Zone Management**

Michigan established a coastal management program in response to the Coastal Zone Management Act (1972). The Michigan program was developed to: improve protection of sensitive shoreline resources, identify coastal areas appropriate for development, designate areas hazardous to development, and improve public access to the coastline. The program

includes grants, administration of sections of Michigan's Natural Resource and Environmental Protection Act that are related to coastal resources (1994 PA 451), and review of federal agency activities for consistency with Michigan's approved program. The three elements of the Coastal Management Program — high-risk erosion areas, flood risk areas, and environmental areas — provide consumer protection from the natural hazards of coastal erosion and flooding as well as environmental protection.

There are no high-risk erosion areas, flood risk areas, or environmental areas identified by Michigan Department of Environmental Quality within the national lakeshore (Martin Jannereth, Land and Water Management Div., Great Lakes Shorelands section chief, 4/5/01). The National Park Service proposes no development in any area of the national lakeshore that would conflict with the coastal management program.

### **Wild and Scenic Rivers**

The Miners River and the Mosquito River in Pictured Rocks National Lakeshore are listed on the Nationwide Rivers Inventory (NRI) prepared by the National Park Service. This inventory is a register of rivers that may be eligible for inclusion in the national wild and scenic river system. These rivers were included on the inventory based on the degree to which they are free flowing, the degree to which the rivers and their corridor are undeveloped, and the outstanding natural and cultural characteristics of the rivers and their immediate environments. Section 5 (d) of the National Wild and Scenic River Act (Public Law 90-542) requires that, "In all planning for the use and development of water and related land resources, consideration shall be given by all federal agencies involved to potential national wild, scenic and recreational river areas." In partial fulfillment of the section 5 (d) requirements, the National Park Service

has complied and maintains the Nationwide Rivers Inventory.

The intent of the inventory is to provide information to assist in making balanced decisions regarding use of the nation's river resources. A presidential directive and subsequent instructions issued by the Council of Environmental Quality, and codified in agency manuals, requires that each federal agency, as part of its normal planning and environmental review process, take care to avoid or mitigate adverse effects on rivers identified in the inventory.

A 9-mile long segment of the Miners River between County Road H-58 and its mouth at Lake Superior is included on the Nationwide Rivers Inventory because of its recreational, fish, and wildlife values.

A 6.5-mile long segment of the Mosquito River from Section 17, T48N, R17W to its mouth with Lake Superior is included on the inventory because of its scenic, recreational, geologic, and fish values.

No actions proposed would impact the values for which the rivers were included on the National Rivers Inventory or prevent their future designation as wild or scenic rivers.

### **Vegetation and Plant Communities**

Implementation of the management prescriptions or actions identified in the alternatives would result in minor changes in vegetation or plant communities within the lakeshore. Some actions might require clearing, but such clearing would be small scale and local. Clearing associated with county road improvements is addressed in the "Impacts on Visitor Experience" sections. Land in the inland buffer zone would continue to be managed as commercial timber. Because there would be little if any change in vegetation and plant communities within the lakeshore, this topic is not included in the analysis. Specific actions will require further analysis before implementation.

## **General Wildlife**

The management prescriptions and specific actions associated with each alternative have been evaluated with regard to effects on common wildlife species within the national lakeshore. NPS biologists have determined there would be little if any effect on common wildlife species. No dramatic changes on habitat, resident or migratory populations, or the diversity of general wildlife species within the national lakeshore would be expected.

## **Water Quality**

Two issues related to water quality were raised during the scoping process: (1) the effect of a fuel spill on inland lakes within the lakeshore and (2) sedimentation downstream of road crossings. Consultation with the Michigan Department of Environmental Quality (Great Lakes and Environmental Assessment Section, Surface Water Quality Division, Bill Taft, pers. comm. 1/27/00 and 4/12/00) revealed that the probability of a spill of a quantity that would cause widespread harm is extremely low, and if such a spill were to occur, emergency response measures would be implemented to minimize the effects. The National Contingency Plan considers a minor spill to be less than 1,000 gallons. It is unlikely that a spill in the national lakeshore from small boats would exceed 5 gallons.

Consultation with the Michigan Department of Natural Resources fisheries biologist (Jim Waybrant, Fisheries Habitat Biologist, Newberry Operations Service Center, pers. comm. 4/12/01) indicated that sedimentation from road crossings occurs, but is not a significant factor affecting spawning by anadromous fish. Therefore, this topic is not included as an impact topic.

## **Wetlands**

An assessment of the management prescriptions and actions indicated that although there are many wetlands in the national lakeshore, there is no indication that they would be affected by management prescriptions or actions. Before initiating any ground-disturbing projects, further investigation would be conducted to ensure that no wetlands would be affected. This topic is not included as an impact topic.

## **Unique Landforms**

Grand Sable Dunes is a designated critical dune area by the Michigan Department of Environmental Quality. Any actions that would result in adverse impacts on the dunes have been eliminated. For this reason, unique landforms is not included as an impact topic.

## **Prime and/or Unique Farmland**

The Farmland Protection Policy Act (PL 97-98) (1981) was passed to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to ensure that federal programs are administered in a manner that, to the extent practicable, is compatible with state, unit of local government, and private programs and policies to protect farmland. Farmland categories includes prime, unique, or land of statewide or local importance.

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing

season, and moisture supply needed to economically produce sustained high-quality or high-yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables.

Farmland, other than prime and unique, that is of statewide or local importance for the production of food, feed fiber, forage, or oilseed crops, as determined by the state or local government, is also considered farmland for purposes of the act.

The National Park Service consulted with the Department of Agriculture's Natural Resource Conservation Service (Chuck Schwenner, Soil Scientist, 4/12/01), the agency responsible for implementation of the policy. The Natural Resource Conservation Service identified one area of about 30 acres that is classified prime farmland. This area is in federal ownership and would not be developed under actions proposed in this plan.

There are several areas in the inland buffer zone that if drained would be prime farmland. These small areas are near the Miners River Road and Carmody Road. These lands are privately owned and zoned by Alger County to allow single-family dwellings on lots of 10-acre minimum. Permitted land use includes sustained yield timber harvest, agricultural production operations (crop cultivation, pasture, orchards, farmstead, and similar uses [except feedlots, poultry farms, and fur farms]), and outdoor recreation uses such as hunting, fishing, and trapping. These areas would not be developed under county zoning regulations or the actions proposed in this plan.

### **Development in Floodplains**

Executive Order 11988, "Floodplain Management," was implemented to avoid to the extent possible the long- and short-term

adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The order requires that agencies avoid the base floodplain (100-year or 1%) unless it is the only practicable alternative or adjust the base floodplain to reduce the hazard and the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial floodplain values. The National Park Service established policies and procedures for implementing the order which include limiting the construction of administrative, residential, warehouse, and maintenance buildings, or other man-made features, which by their nature entice or require individuals to occupy the site, are prone to flood damage, or result in impacts on natural floodplain values. Also limited are (1) the development of schools, hospitals, clinics, or other facilities that are occupied by people with physical or medical limitations, (2) fuel storage facilities, (3) sewage treatments plants that treat 40,000 gallons per day or more, (4) the storage of toxic or water-reactive materials, including hazardous materials, (5) irreplaceable records, museums, the storage of archeological artifacts, and (6) emergency services within the 500-year (0.2%) floodplain. The order and NPS policy also direct special consideration of areas subject to flash flooding and coastal high hazard areas.

None of the actions in any of the alternatives would result in development in floodplains or high-hazard areas or increase the risk of loss of life and property from flood damage. Natural and beneficial floodplain values would not be affected because there would be no modification of floodplain areas.

### **Soil**

Although there would be short-term disturbance of soil associated with road construction or improvements or proposed

development, the extent is confined to very specific areas. Road improvements would reduce erosion potential and dust associated with bare soil as road base. The erosion potential is generally low because the topography is relatively level and the degree of vegetative cover is very high. The application of appropriate best management practices, such as silt fencing, prompt revegetation, and slope consideration, as identified by Michigan Department of Environmental Quality, would control and mitigate construction impacts to be negligible. Disturbance would take place on very specific sites of limited area or along narrow corridors associated with roads. The total developed area of the lakeshore would be very low, so permeability and runoff would not be affected to a noticeable degree.

### **Geologic Hazards**

There are no specific geologic hazards, such as earthquakes, volcanoes, or landslides. There is potential for cliffs and other areas to collapse into Lake Superior as part of the natural erosion process. None of the actions analyzed in this management plan would affect this natural process. Therefore, this topic has been dismissed from further consideration.

### **Air Quality**

Air quality in the national lakeshore meets national ambient air quality standards for specified pollutants. Although actions proposed in this plan could result in short-term minor effects related to dust and emissions associated with construction and road improvements, no long-term change in air quality associated with these actions would be expected (Brian Brady, Michigan Department of Environmental Quality, Environmental Quality Manager, Marquette District, pers. comm. 3/20/01).

### **Fire**

Woodland fire is infrequent in northern hardwood forests, the predominant forest type in the national lakeshore. Pine forests are subject to more frequent lightning-caused fires, on an average 23-year interval (Loope 1998). There is evidence of a similar frequency on small coastal pine forests (500 acres or less) associated with human habitation or use (Loope 1998). The fire frequency at the national lakeshore is one or fewer naturally caused fires each year that burn 1 acre or less; these fires usually extinguish themselves.

The new campground proposed in some of the alternatives might increase the potential for human-caused fire. However, the likelihood of this occurrence would be low because campground design and use restrictions would minimize the risk and because resource management policies for the national lakeshore call for prompt suppression of wildfires. Therefore, this topic is not included as an impact topic.

### **Transportation**

The transportation infrastructure would not change significantly within the lakeshore with implementation of any of the alternatives in this document. There are no proposals for primary or secondary road construction in this plan that would increase the extent of the transportation system in the vicinity of the national lakeshore. Some alternatives in this management plan consider road improvements and the construction of some additional roads to provide or improve access and visitor experience; specific improvements to the Alger County road system by the county are also encouraged. The effects are fully analyzed in the other impact topics discussed.

### **Energy Requirements and Conservation Potential**

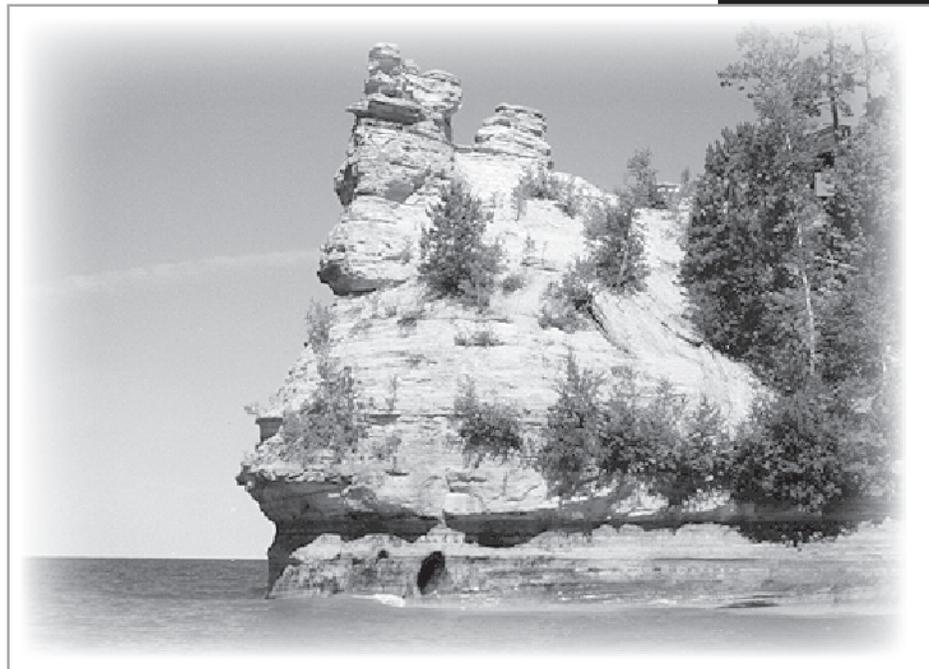
None of the alternatives presented in this plan would result in a major change in energy consumption compared to current conditions. The National Park Service would pursue sustainable practices whenever possible in all decisions regarding national lakeshore operations, facilities management, and development in Pictured Rocks National Lakeshore. Whenever possible, the National Park Service would use energy conservation technologies and renewable energy sources.

### **Environmental Justice**

Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of federal programs and policies on minority and low-income populations and that these programs and policies do not discriminate against people (including populations) because of race, color, or national origin. None of the actions proposed in this management plan would have disproportionate or adverse impacts on minorities or economically disadvantaged populations. Therefore this impact topic has not been analyzed.

Chapter 2

.....  
**ALTERNATIVES,  
INCLUDING  
THE  
PREFERRED  
ALTERNATIVE**





## INTRODUCTION

### INTRODUCTION TO THE ALTERNATIVES

This *Draft General Management Plan and Wilderness Study / Environmental Impact Statement* presents five alternatives, including the National Park Service's preferred alternative, for future management of Pictured Rocks National Lakeshore. The five alternatives are the no-action alternative (continuation of existing management), the NPS preferred alternative, alternative A, alternative C, and alternative E. Two other alternatives were presented to the public in *Newsletter 3*. Alternative B was dropped (see the "Actions and Alternatives Dismissed from further Consideration" section). Alternative D was modified to create the preferred alternative.

The alternatives, which are based on the national lakeshore's mission, purpose, and significance, present different ways to manage resources and visitor use and improve facilities and infrastructure at the national lakeshore. The no-action alternative also serves as a baseline for comparing the environmental consequences from implementing each alternative.

This chapter also describes the planning process used by the planning team, and it includes tables that summarize the key differences between the alternatives and the key differences in the impacts that are expected from implementing each alternative. The summary of impacts table is based on the analysis in Chapter 4, "Environmental Consequences."

### FORMULATION OF THE ALTERNATIVES

Many aspects of the desired future condition of Pictured Rocks National Lakeshore are defined in the establishing legislation, the national lakeshore purpose and significance

statements, and servicewide mandates and policies that were described earlier. Within these parameters, the National Park Service solicited input from the public, national lakeshore staff, government agencies, tribal officials, and other organizations regarding issues and desired conditions for the national lakeshore. The first opportunity for public comment was at the beginning of the general management plan project in August 1999. About 300 comments were received.

Planning team members gathered information about existing visitor use and the condition of the national lakeshore's facilities and resources. They considered which areas of the national lakeshore attract visitors, and which areas have sensitive resources.

Using the above information, the planning team developed nine management prescriptions for guiding the preservation, use, understanding and development of Pictured Rocks National Lakeshore and its resources. The management prescriptions are applied in varying combinations and locations in the alternatives. These prescriptions, described in the following section, form the basis of the plan's alternatives.

The planning team developed four alternatives and the no-action alternative to reflect the range of ideas proposed by the national lakeshore staff and public. Each of the alternatives consists of an overall management concept and general management strategies and a description of how different areas of the national lakeshore would be managed (management prescriptions and related actions).=

The preferred alternative and alternative E also explore different possibilities for wilderness. In these alternatives management is the same for the east and west ends of the lakeshore to simplify the alternatives and

focus attention on wilderness opportunities in the middle portion.

As noted above in the "Guidance for Planning" section, the National Park Service would continue to follow existing agreements and servicewide mandates, laws, and policies under all alternatives considered in this plan. These mandates and policies are not repeated in this chapter. However, other general management plan proposed actions *do* differ among the alternatives. These alternative actions are discussed in this chapter.

The alternatives focus on *what* resource conditions and visitor experiences/opportunities should be at Pictured Rocks rather than on details of *how* these conditions and experiences should be achieved. Thus, the alternatives do not include details on resource or visitor use management techniques. More detailed plans or studies will be required before most developments proposed in the alternatives are built. The implementation of any alternative also depends on future funding and environmental compliance and resource protection issues. This plan does not guarantee that that money will be forthcoming. The plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national lakeshore, but full implementation could take many years.

These five alternatives embody the range of what the public and the National Park Service want to see accomplished with regard to visitor use and experience, natural resource conditions, and cultural resource conditions at Pictured Rocks National Lakeshore. The actual configurations for future national lakeshore conditions and management within each alternative were developed by placing the management prescriptions (described in the next section) on a map.

In some cases, all four action alternatives apply the same management prescription to the same area. For example, the orientation/history management prescription is similar for

each alternative because this seems to be the most appropriate way to manage these facilities, regardless of the alternative selected.

## DEVELOPMENT OF GMP COST ESTIMATES

NPS decision makers and the public must consider an overall picture of the complete costs and advantages of various alternatives, including "no action," to make wise planning and management decisions for the national lakeshore. This can shed light on the cost of the no-action alternative and allow a more legitimate comparison to the action alternatives.

It is important that the cost estimates contain the same elements and are developed with the same general assumptions so there can be consistency and comparability among alternatives. Development of life-cycle costs provides a way to combine one-time and recurring costs (such as annual operating costs) into comparable numbers. Comprehensive life-cycle cost estimates are a key factor to be used along with impacts and advantages of the various alternatives during the process of selecting a preferred alternative.

Life-cycle costing is an economic assessment of different alternatives, considering all significant costs over a specified period of time, expressed in equivalent dollars. Life-cycle costs reflect the aggregated initial-one-time costs and recurring costs into the future over a period of time. The National Park Service uses a time period of 25 years to project life-cycle costs in design and construction, and that is also a reasonable amount of time for evaluating general management plan alternatives. The present worth method is used to convert present and future expenditures into an equivalent expenditure today. This method is based on the time value of money, or the principle that a dollar spent today is worth more in the future because if it was invested it would yield a return. To calculate the present

worth of future annual and recurring (replacement) expenditures, the life-cycle costs are calculated using a “discount rate” that is an assumed rate of return. The National Park Service uses a discount rate of 7%.

The main components of life-cycle costing are as follows:

### **Initial One-Time Costs**

- new development (including NPS transportation infrastructure costs)
- major rehabilitation or replacement of existing facilities and infrastructure
- interpretive media (audiovisual, exhibits, waysides, publications)
- resource management and visitor service costs (resource and visitor inventories, implementation planning, compliance)
- other significant one-time costs, such as removal of development, transportation equipment, restoration of resources specific implementation plans, or major compliance needs.

### **Recurring or Replacement Costs**

These are significant anticipated costs that recur at intervals (other than annual) within the life-cycle cost time period of 25 years. Examples might be if the National Park Service is supplying bus equipment that will be replaced every eight years, or constructing temporary yurt structures that will be replaced every 12 years.

### **Recurring Annual Costs**

- annual national lakeshore operating costs (staff salary and benefits, equipment, maintenance, utilities, monitoring, contact services, etc.)
- ongoing repair and rehabilitation of facilities (projection of past trends and

known future needs into an annual estimate)

### **IMPLEMENTATION OF THE APPROVED MANAGEMENT PLAN**

Actions requiring construction to implement the intentions of the approved management plan will require funding, design, environmental analysis, and public involvement before implementation.

### **BOUNDARY ADJUSTMENTS**

A boundary adjustment would not be considered under any of the alternatives.

### **LAND ACQUISITION / TRANSFERS**

Under all alternatives, the National Park Service would attempt to acquire outstanding mineral rights on federally owned lands.

The federal government would continue to pay PILT (payment-in-lieu of taxes) payments to Alger County based upon a government-wide formula and the number of acres that were withdrawn from county tax rolls as the result of past federal acquisition.

Under all alternatives the National Park Service would seek transfer of about 7.5 acres at Coast Guard Point in Grand Marais from the Coast Guard and Army Corps of Engineers to consolidate ownership and improve public access.

Under the action alternatives (preferred, A, C, and E), the National Park Service will consider land acquisition within the inland buffer zone if the land is available (including donations), if there are willing sellers, and if federal funds are available. In addition, the transaction must meet at least one of the following criteria is met:

- Lands protect key viewsheds, particularly those associated with proposed designated wilderness area.
- Lands protect scenic views adjacent to or associated with the Lakeshore’s backcountry trail system.
- Lands emphasize riparian area acquisition (including shoreline and headwaters).
- Lands have potential for imminent development that may be deemed detrimental to national lakeshore resources and values.
- Lands have documented threatened or endangered species or their habitat.
- Lands represent the breadth of biotic diversity.

Lands offered to the National Park Service outside of the existing park boundary would be evaluated through a separate boundary assessment process. Expansion of the legislated boundary requires action by Congress.

## WILDERNESS STUDY

To help understand how wilderness areas can be used by the public, the following page defines uses, management actions, and facilities in wilderness areas that are permitted or prohibited.

### Findings

Federally owned lands and waters within the legislated boundary of Pictured Rocks National Lakeshore have been evaluated with respect to the characteristics of wilderness as defined by the Wilderness Act of 1964 (P.L. 88-577, 16 U.S.C. 1131-1136). This study has identified 18,063 acres of the national lakeshore that possess wilderness characteristics — that is 5,220 acres in Chapel Basin and 12,843 acres in Beaver Basin. All of the lands and waters in the study area are in federal (National Park Service) fee-simple ownership. The study area includes federally owned

portions of Township 47 North Range 18 West, Township 48 North Ranges 16, 17, and 18 West, and Township 49 North Range 16 West (see Wilderness Study map). The land is in Alger County, Michigan.

By definition,

A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural condition and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Wilderness Act of 1964, P.L. 88-577,  
Section 2. (c)

The Wilderness Act criteria and how they apply to the national lakeshore have been divided into sections for ease of understanding.

**untrammelled.** Although altered by logging in historic times, Beaver and Chapel Basins represent a significant area that has returned to natural conditions and shows little evidence of past influences.

**primeval character and influence.** Although there is some evidence of historic use as a corporate retreat in the Beaver Lake

## USES AND MANAGEMENT IN WILDERNESS

Although this study is not examining use or management of wilderness, the Wilderness Act and NPS policies permit and prohibit various uses, developments, and actions. These directions need to be considered in evaluating the impacts of the wilderness proposals.

Various recreational uses, management actions, and facilities are permitted in wilderness areas under the Wilderness Act and NPS policies. Among the uses, management actions, and facilities **permitted** in wilderness are:

- nonmotorized recreational uses (e.g., hiking, backpacking, picnicking, camping)
- hunting, trapping, and fishing
- Native American religious activities and other actions recognized under treaty-reserved rights
- guided interpretive walks and onsite talks and presentation
- use of wheelchairs, service animals, and reasonable accommodations for the disabled that are not in conflict with the Wilderness Act (e.g., barrier-free trails, accessible campsites)
- scientific activities/research
- monitoring programs
- management actions taken to correct past mistakes or impacts of human use, including restoration of extirpated species, controlling invasive alien species, endangered species management, and protection of air and water quality
- fire management activities (including fire suppression)
- protection and maintenance of historic properties eligible for the National Register of Historic Places
- trails
- campsites
- certain administrative facilities if necessary to carry out wilderness management objectives (e.g., storage or support structures, ranger station)
- signs necessary for visitor safety or to protect wilderness resources
- uses and facilities permitted for landowners with valid property rights in a wilderness area

The Wilderness Act also specifically **prohibits** certain uses and developments. Under sections 2(c) and 4(c) of the act, the following uses are not permitted in a wilderness:

- permanent improvements or human habitation
- structures or installations
- permanent roads
- temporary roads
- use of motor vehicles
- use of motorized equipment
- landing of aircraft (except for emergency purposes)
- other forms of mechanical transport (e.g., bicycles)
- commercial enterprises (except for commercial services that are necessary for realizing the recreational or other wilderness purposes of the area, such as guiding and outfitting)

With the exception of permanent roads, the act does recognize that the above uses **may be permitted** if necessary to meet the minimum requirements for the administration of the area as wilderness or for emergency purposes.

In addition to the above prohibitions, NPS policies **also prohibit** some developments:

- new utility lines
- permanent equipment caches
- site markings or improvements for nonemergency use
- borrow pits (except for small quantity use of borrow material for trails)
- new shelters or public use
- picnic tables
- interpretive signs and trails and waysides (unless necessary for visitor safety or to protect wilderness resources)

area (structures have been removed), all the land identified in the study area exhibits a primeval character. Management of the land identified in the study area has focused on maintaining the primitive character, and permanent improvements or human habitation have not been permitted.

**the imprint of man's work substantially unnoticeable.** The road to Little Beaver Lake and the small campground are the only improvements readily noticeable. There are several small dams upstream of Beaver Lake that were associated with the Michigan-Wisconsin Pipeline Company hunting club.

**protected and managed so as to preserve its natural conditions.** Since the 1981 *General Management Plan* for the national lakeshore was prepared, Beaver and Chapel Basins have been managed as primitive areas to preserve their natural condition.

**outstanding opportunities for solitude or a primitive and unconfined type of recreation.** Opportunities for solitude and a primitive and unconfined recreation experience are very high in Beaver and Chapel Basins. Wilderness values are diminished to a minor degree by noise from motorized watercraft on Lake Superior and Beaver Lake, logging, and vehicles in the Little Beaver Lake campground.

## Description of Study Area

**Physical and Resource Values.** The area containing wilderness characteristics is centered on 761-acre Beaver Lake, 39.5-acre Little Beaver Lake, and 62-acre Chapel Lake. These are two of the major drainage systems of the national lakeshore. The Beaver and Chapel basins were formed in eroded sands by meltwater channeling to an outlet of ancient Lake Minong following a glacial ice sheet retreat circa 10,000 B.P. The basins open to Lake Superior, which defines the study area's

northern boundary. Dissected uplands bound the Beaver Basin on the west and a series of escarpments representing a face of the meltwater channel (the Beaver Basin escarpment) essentially define the northeast, east, and southern boundaries of the unit. A complex of beach ridges with a mantle of dune deposits lies north of Beaver Lake separating that body of water from Lake Superior. These forested beach ridges cover an area of approximately 1,100 acres. The Chapel area is bounded by extensive wetlands to the south and sandstone cliffs reaching a height of 200 feet along the Lake Superior shore to the north.

The dominant vegetative cover type of the study area is maple/beechness with interspersed coniferous (spruce and fir) forest in wetter areas and pockets of white pine and hemlock on drier soils. Although logged during the first 60 years of the 1900s, in many areas the forest is regaining old-growth characteristics. In other areas, pockets of forest openings mark the physiography, the most notable being along the southeast shoreline of Beaver Lake. Remaining forests are maturing and will likely become old growth. Nonnative invasive plant species are not widespread; and efforts to control these species are underway. Several tributary streams to Beaver and Chapel Lakes flow to those water bodies from wetlands adjacent to or immediately below the escarpments. The most significant streams are Beaver Creek, which flows to Lake Superior as an outlet from Beaver Lake, and the Mosquito River, which drains extensive wetlands south of the study area. The Sevenmile Creek and Sevenmile Lake drainage and its pockets of wetlands and water bodies dominate the eastern portion of the study area, the most noteworthy being Trappers Lake (48 acres).

The study area provides habitat for a number of important animal species including gray wolf (*Canis lupus*), moose (*Alces alces*), American bald eagle (*Haliaeetus leucocephalus*), black bear (*Ursus americanus*), fisher (*Martes pennanti*), American marten (*Martes*

Wilderness Study

map

back of map

*americana*), peregrine falcon (*Falco peregrinus*) and northern goshawk (*Accipiter gentilis*).

Aquatic systems in the study area are important resources with Sevenmile Creek and Mosquito River being part of a Lake Superior-wide coaster brook trout (*Salvelinus fontinalis*) restoration program. Major lakes and their tributaries possess a wild character. River otter (*Lontra canadensis*) and beaver (*Castor canadensis*) frequent the area, and a recent study has discovered viable populations of freshwater mussels and sponges in Beaver and Chapel Lakes.

Long-term vegetation, avian, and aquatic monitoring is underway or planned within the study area as part of a lakeshore-wide inventory and monitoring science and natural resources program. Other research includes black bear distribution, habitat use and harvest effects, and bald eagle productivity and blood toxicology.

**Administrative Facilities.** The Chapel and Beaver Basin study areas contain a network of maintained hiking trails emanating from the Chapel and Beaver Lake day use parking area. About 41 miles of hiking trails are included in this area, including 20 miles of the North Country National Scenic Trail. Many of these trails were originally rough four-wheel drive logging access roads prior to the establishment of the national lakeshore. These former two-tracks have largely grown in with native vegetation, presenting today the appearance of a trail

In addition, the area also includes three backcountry campgrounds, one of which is a group campground. A total of 41 individual and 5 group backcountry sites are available in these areas.

The Chapel day use parking area (37-vehicle capacity) is adjacent to the study area, providing a portal to this section of the park's backcountry. The site includes a vault type

toilet, bulletin board, and one wayside interpretive exhibit.

The Chapel study area also includes remnant four-wheel drive logging roads. A road enters the area from the Chapel access road about 0.1 mile south of the national lakeshore fee boundary (shoreline zone) in the southeast quarter of the northwest quarter of section 32. The logging road traverses westerly through sections 32 and 31, crossing Mosquito River en route. The entire length of this and three other connecting logging roads is about 1.75 miles.

The Beaver Basin study area contains an unimproved and nonmaintained administrative road to the site of the former corporate hunting and fishing lodge complex on the southeast shoreline of Beaver Lake. The road enters the area from the basin escarpment in the SE quarter of the SE quarter of Section 16, Township 48N, Range 16W, and extends for a distance of about 1.75 miles. This single lane roadway is being allowed to revert to the surrounding natural landscape conditions. A two-stall wood frame garage structure associated with the former corporate camp is adjacent to the road and about 1 mile from its beginning at the escarpment. This garage — formerly used to store some park equipment — is identified for removal.

The Little Beaver development includes overnight and day use backpacker parking area (20-vehicle capacity), which is adjacent to the study area providing a portal to this section of the park's backcountry. The area also includes Little Beaver Lake campground with eight sites. The campground development includes a four-vehicle boat ramp parking area. The site includes a vault type toilet, bulletin board, and a 1-mile self-guiding interpretive trail. These are nonconforming uses and would have to be removed if the area around the Little Beaver Lake campground were proposed for wilderness.

**Public Recreational Use.** The Chapel and Beaver Basin areas are managed as ‘back-country.’ Public recreational use centers on overnight hiking, backpack camping, and day hiking, and trail walking. A system of seven backcountry campgrounds (41 sites, 5 of which are group sites), accessible only by foot or by watercraft, is within the study area. Camping numbers and level of intensity are managed with a permit system as part of the NPS recreational fee demonstration program. A system of hiking trails provides the principal means of access within the Chapel and Beaver Basins.

A 37-car day use parking area is adjacent to the Chapel Basin portion of the study area. The Chapel parking lot provides a portal into the adjacent backcountry area. In the Beaver Basin area, an eight site vehicle accessible (drive-in) campground with associated boat launching ramp and backpackers parking area provides a portal into the area. Other uses in the Beaver Basin include canoeing, fishing, and boating, primarily on Little and Big Beaver Lakes.

Most recreation use of the area occurs from Memorial Day to Labor Day, consisting of overnight backpacking and day hiking. Hike-in fishing occurs infrequently on Chapel and Little Chapel Lakes. Fishing in the Mosquito River for trout is popular with anglers spring through fall.

Fishing on Beaver Lake in particular is popular throughout the year, especially during the spring and fall seasons. In the Sevenmile Creek and Lake portion of the area, spring and fall stream fishing associated with seasonal salmon runs results in a spike of recreational use at those locations. Nonmaintained two-track (former logging) roads currently open to the public in the Mosquito River and Sevenmile Creek areas provide limited vehicular access combined with nonmaintained trails to the most popular fishing locations. Some hike-in fishing of the ponds and streams elsewhere in the area also occurs. Brook trout

is the targeted species at those locations. Motorized watercraft use (10-hp limit) is currently permitted on the interconnected Beaver and Little Beaver Lakes. Motorized watercraft use on all other waters in the Beaver Basin is prohibited.

Hunting for ruffed grouse, migratory waterfowl, white-tailed deer, and black bear occurs throughout the Beaver Basin as permitted by the park’s enabling legislation. (P.L. 89-668, SEC. 5. *In administering the lakeshore the Secretary shall permit hunting and fishing on lands under his jurisdiction in accordance with the applicable laws of the United States and of Michigan.*)

**Evidence of Past Human Use.** The study area encompasses portions of a regional landscape identified as culturally important to several Native American Indian groups. The waters of Chapel, Little Beaver, and Beaver Lakes and their environs are of special importance to the Ojibwa of the region. A June 2000 draft report of *Traditional Ojibway Resources in the Western Great Lakes*, conducted by the University of Arizona at Tucson, discusses in greater detail the importance of the national lakeshore landscape including that of the study area to the Ojibwa people. Additionally, high cliffs, rock promontories, creek mouths, and other natural features are also important to the Ojibwa cosmology.

Archeological resources in the study area are comprised of 19 state-registered pre-historic habitation, hunting camps, and historic camps associated with turn-of-the-century through 1970s use by local residents and loggers.

Several of the recorded archeological sites in the study area related to prehistoric (Archaic and Woodland) and historic habitation sites. Most of those sites are associated with creeks, inland lakes, and the Lake Superior shoreline. None of these resources have been fully assessed or investigated.

The most notable logging era resource still visible is the remnants of an early 1900s logging dam constructed at the mouth of Beaver Creek. The dam raised the water level of Beaver Creek and Beaver Lake permitting the movement of some timber out of the Beaver Basin to the Lake Superior shoreline. Notable historic logging campsites are situated along Sevenmile Creek and on the south shoreline of Beaver Lake adjacent to Lowney Creek.

One historic log cabin structure, dating from the 1940s, is along the trail to the Mosquito backcountry campground (about .25 miles north of the Chapel parking lot. The cabin is not listed on the National Register of Historic Places, nor does park staff believe it to be eligible. There are no other visible cultural sites within the area.

A number of former privately owned “camp” sites comprised of small cabins were present throughout the basin notably in the Sevenmile Creek, Trappers Lake, and Beaver Creek areas of the national lakeshore. All were removed subsequent to the NPS acquisition of the properties. The last structure was removed in 1985 and, unless previously aware that structures were present there, evidence of their prior existence is absent. Most notable among these is the Hall family use of the area as a fishing and hunting locale. Extensive journals from the Hall family record the historic scene and use of the area in the late 1880s through the turn of the century. Copies of the journals are maintained in the national lakeshore museum collection.

Before the October 15, 1966, enactment of PL 89-668 and the initiation of NPS land acquisition actions at the national lakeshore, the Michigan-Wisconsin Pipeline Company had acquired and assembled during the period 1958-66 a tract of about 2,000 acres of land and had acquired or constructed facilities as a corporate employee retreat (camp) within the Beaver Basin. Their facility development included stream impoundments for fishing, a

system of improved two-track roads linking deer feeding stations, and lodges and related support services buildings centered along a portion of the southeast shoreline of Beaver Lake. Upon completion in 1974 of the acquisition of these lands and properties by the National Park Service, removal of the structures began. With the exception of a two-stall service garage once used by the National Park Service for storage and now slated for removal, all of the buildings associated with the camp were removed by the spring of 1983. Several of the impounded stream ponds remain in evidence, though to the untrained eye the most significant ones now appear natural. The low head earthen dams are being used as a base for beaver dams at several locations. A small (less than 5 acres) sand and gravel borrow pit associated with the company’s camp is evident adjacent to the current NPS administrative road leading to the site from the escarpment.

Timber within the Chapel and Beaver Basins was selectively harvested by corporate, other private, and state of Michigan owners before NPS acquisition. Most harvesting occurred during the late 1940s to late 1950s, with none taking place after 1965. Today, in combination with pockets of timber believed to be virgin or not harvested since the early 1900s, the forested landscape is reestablishing old-growth structure and function.

The most noticeable evidence of human use of the area is the NPS system of trails, rustic wood bridge stream crossings, and back-country (walk-in) campsites with associated wood routed trail intersection/directional signs. Many of these trail sections were formerly logging era two-tracks or vehicle use routes associated with the corporate or other private landowner camps. In accordance with NPS management prescriptions for the back-country, those roads were converted to trails.

**Mining Claims.** There are no mining claims in the study area. There are oil and gas reservations related to the former state of Michigan

lands (190 acres), the former Michigan-Wisconsin Pipeline Company lands (2,003 acres), and the former Cleveland Cliffs Iron Company lands (7,190 acres). There are no such reservations related to either the former Cliffs-Dow Chemical or the other remaining former privately owned lands.

The former Cleveland Cliffs Iron Company lands were acquired by the federal government subject to a ‘Restrictive Easement Deed’ dated April 29, 1971, pertaining to any potential mineral extraction actions the company and/or its *‘successors and assigns’* might undertake in exercising their mineral reservation. As a result, the restrictive easement affects not only ownership of the mineral rights by the company, but any future owners of those rights. Conditions of the easement make it highly unlikely that the reserved mineral extraction rights would be exercised. This “Restrictive Easement Deed” is recorded with the Alger County (Michigan) Register of Deeds as: ‘RESTRICTIVE EASEMENT DEED’ in Liber 082 pages 52 to 87 with a recording date of May 3, 1971.

Although no such restrictive easement deed is in effect for either the former Michigan-Wisconsin Pipeline Company or the state of Michigan lands, it is also highly unlikely in light of the absence of known mineral deposits within the area of extraction interest that those reservations would be exercised.

Lands immediately adjacent to the boundary of the study area are in a mix of state of Michigan; ForestLand Group, Limited Liability Corporation, and federal (NPS) ownership. The state of Michigan and ForestLand Group, Limited Liability Corporation lands are in the inland buffer zone of the national lakeshore and are subject to provisions of the national lakeshore’s enabling legislation with respect to the harvesting of timber resources. The NPS lands immediately adjacent to the study area boundary are managed as backcountry with the exception of an eight site drive-in campground on Little Beaver Lake with its associated boat access to Little Beaver and Beaver Lakes and a backcountry trailhead parking area.

Timber harvesting activity is largely selective cut of stands of the predominant maple-beech forest on a long-term (sustained yield) cyclic basis. The cycle currently being practiced by ForestLand Group, Limited Liability Corporation, in particular is 15-20 years. Adjacent pockets of aspen and jack pine are harvested as clear cuts. Depending upon the species harvested, when timber harvesting is ongoing or recently completed, there can be a marked contrast in appearance between the vegetative cover of the study area and that of the adjacent lands.

## MANAGEMENT PRESCRIPTIONS

A management prescription defines specific resource conditions and visitor experiences to be achieved and maintained in each particular area of the national lakeshore under each of the action alternatives (i.e., except the no-action alternative). Each prescription includes the types of activities and facilities that are appropriate in that management prescription. However, not all facilities that are appropriate in a management prescription will be constructed in each area to which the prescription is applied. Decisions to determine what facilities are appropriate will be based on an analysis of resource protection and visitor experience needs. The management prescriptions were presented to the public in *Newsletter 2* and were modified in response to public comments. The management prescriptions were developed as a result of this planning effort and therefore are not applied to the no-action alternative and map.

In formulating the alternatives, the management prescriptions were placed in different locations or configurations on the map according to the overall intent (concept) of each of the alternatives. That is, the manage-

ment alternatives represent different ways to apply the nine management prescriptions to the national lakeshore. For example, an alternative whose overall concept includes having as much wilderness as possible will have more of the primitive management prescription than an alternative whose overall concept is to increase access to the entire national lakeshore.

The alternative descriptions and maps also indicate the National Park Service's *desired* management prescriptions for land in the inland buffer zone that would be consistent with the philosophy of the alternative. In most cases, the *desired management* of these lands is the same as existing management and is consistent with county zoning regulations (see appendix D).

The nine management prescriptions for Pictured Rocks National Lakeshore are presented in table 2. Visitor experiences, resource conditions, and appropriate activities and facilities are described for each management prescription.

TABLE 2: PICTURED ROCKS NATIONAL LAKESHORE MANAGEMENT PRESCRIPTIONS

Management Prescription	Resource Condition or Character	Visitor Experience (what the visitor sees, feels, encounters)	Appropriate Activities or Facilities (what the visitor is doing, what facilities may be appropriate)
<b>Orientation/ History</b>	<p>Preservation or interpretation of cultural resources is emphasized in some areas. Buildings, facilities, and other signs of human activity are obvious, but natural elements are present.</p> <p>Highly managed; some areas are paved or hardened to protect resources or focus visitor use, and some areas near buildings are mowed.</p> <p>Settings may be managed to reflect a particular era.</p> <p>May be located where primary lakeshore features can be seen or experienced, provided resource integrity is not compromised.</p>	<p>Visitors get an overview of lakeshore opportunities, activities, and resources. Outdoor skills and physical exertion are not needed; opportunities for challenge or adventure are rare.</p> <p>Time commitment is short for orientation, or moderate for in-depth interpretation.</p> <p>Interaction and encounters with lakeshore staff and other visitors are common, but overcrowding is rare.</p> <p>Structured visitor opportunities, such as interpretive programs and tours, are provided, but self-guided opportunities are also available.</p>	<p>Orientation and interpretation facilities such as visitor centers, contact stations, kiosks, wayside exhibits, and other interpretive media are appropriate.</p> <p>Access and support facilities such as parking areas, paved walkways, restrooms, picnic areas, and overlooks would be likely; facilities would be compatible with the setting.</p> <p>Facilities might include groupings of historic structures and related landscapes.</p> <p>Sightseeing, walks, educational programs, visiting cultural resources, and other organized activities would be common.</p> <p>Most facilities would be accessible to visitors with disabilities; historic structures might be modified to accommodate these visitors.</p>
<b>Casual Recreation</b>	<p>Some natural and cultural resources could be modified for essential visitor and lakeshore needs (e.g., paving trails or felling hazardous trees).</p> <p>There would be a high level of management provided to ensure natural and cultural resource protection and public safety and reduce visitor conflicts (e.g., fences, law enforcement, and restrictions on visitor activities).</p>	<p>Visitor attractions would be convenient and easily accessible.</p> <p>Observing the natural environment is important, but there would be little need for visitors to exert themselves, apply outdoor skills, or spend a long time in the area.</p> <p>There would be a good chance of encountering other visitors and lakeshore staff.</p>	<p>Activities would include enjoying scenery, short walks, beach strolling, casual driving, motorized and nonmotorized boating, and camping.</p> <p>Facilities that support visitor touring would be present – overlooks, boat ramps, short trails, picnic areas, parking areas, restrooms, and drive-in campgrounds).</p> <p>Visitor contact stations and interpretive media (waysides, bulletin boards, interpretive tapes) might be present.</p> <p>Most facilities and some trails would provide access for people with disabilities.</p> <p>Hunting would be allowed except where specifically prohibited.</p> <p>Snowmobiling would be allowed on roads that are open to motorized vehicles during snow-free seasons.</p>

Management Prescription	Resource Condition or Character	Visitor Experience (what the visitor sees, feels, encounters)	Appropriate Activities or Facilities (what the visitor is doing, what facilities may be appropriate)
<b>Primitive</b>	<p>Natural processes and surroundings predominate.</p> <p>There would be a low level of management to support visitor activities and natural and cultural resource protection.</p> <p>A few resource modifications would be evident, but they would harmonize with the natural environment.</p> <p>Tolerance for natural and cultural resource degradation from visitor use would be very low.</p> <p>Any facilities would avoid sensitive resources. Could be applied in designated wilderness.</p>	<p>Provides a sense of remoteness and immersion in nature.</p> <p>Opportunities would exist for closeness to nature, tranquility, physical exertion, and the application of outdoor skills.</p> <p>Requires a fairly long time commitment.</p> <p>Opportunities would exist for challenge and adventure.</p> <p>Tolerance for noise, visual intrusions, and social interaction would be low.</p> <p>There would be little contact with other visitors and lakeshore staff, except in campgrounds.</p>	<p>Facilities would be limited to primitive footpaths and backcountry (tent) campgrounds with minimal facilities.</p> <p>Only nonmotorized activities would be allowed and would include hiking, camping, hunting, fishing, snowshoeing, kayaking, canoeing, and skiing.</p> <p>Structures would be restricted to those necessary to protect resources (e.g., trail planking in wet areas).</p>
<b>Pristine</b>	<p>Would be the most natural of the prescriptions.</p> <p>Tolerance for degradation of natural resources would be very low.</p> <p>Could include areas where low use is desired to protect certain resources or areas that are difficult to access or travel through.</p> <p>Nonsignificant cultural resources would be allowed to molder or decay over time.</p> <p>Could be applied in designated wilderness.</p>	<p>Provides for an independent, wild experience, with full immersion in the natural environment.</p> <p>Feels remote – far from comforts and conveniences.</p> <p>There would be little or no sign of human activity. Environment would offer opportunities for solitude, challenge, adventure, and discovery.</p> <p>Outdoor skills would be needed.</p> <p>Evidence of visitor impacts would be minimal.</p> <p>Tolerance for noise would be very low.</p> <p>Other visitors or lakeshore staff would rarely be encountered.</p>	<p>Has no facilities, including maintained trails or campgrounds.</p> <p>Kayaking, cross-country hiking, and exploring would be predominant visitor activities.</p> <p>Motorized activities and campfire building would not be permitted.</p> <p>Research would be limited to nonmanipulative activities.</p> <p>Management actions would be limited to those that mimic natural processes (e.g., prescribed fire) or restore natural systems and processes.</p> <p>Camping would not be permitted.</p> <p>Management presence would be minimal and subtle, but restrictions on length of stay and numbers of visitors would be possible to protect resources and maintain desired visitor experiences.</p> <p>Hunting and fishing would be allowed.</p>

Management Prescription	Resource Condition or Character	Visitor Experience (what the visitor sees, feels, encounters)	Appropriate Activities or Facilities (what the visitor is doing, what facilities may be appropriate)
<b>Mixed Use</b>	<p>Travel routes would not necessarily be maintained.</p> <p>Natural resources might be highly managed or extracted (e.g., timber management, fish stocking, wildlife habitat management).</p> <p>Would be located primarily within the inland buffer zone.</p>	<p>Interpretation and education programs might be available in remote portions of the national lakeshore.</p> <p>Offers visitors a relatively primitive, independent experience.</p> <p>Visitors travel at their own risk; little or no interpretation would be provided.</p> <p>Access would be via primitive roads or trails.</p> <p>Observing and enjoying the natural environment would be important.</p> <p>Requires a moderate time commitment.</p> <p>Some outdoor skills might be needed; could provide a sense of adventure.</p> <p>Few visitors or lakeshore staff would be encountered.</p>	<p>Facilities would include primitive roads and trails, primitive camps, and private cabins.</p> <p>Motorized and nonmotorized transportation would be acceptable and could include all-terrain vehicles, bicycles, snowshoes, horses, dog sleds, motorcycles, and snowmobiles.</p> <p>Hunting, fishing, hiking, camping, and cross-country skiing would be common.</p>
<b>Developed</b>	<p>Natural environment would be modified for operational and other uses.</p> <p>Would be rural in character.</p> <p>Structures and other facilities would be apparent.</p> <p>Would not be located near sensitive natural or cultural areas if resources could not be protected.</p>	<p>Not intended for visitor use.</p>	<p>Facilities necessary for lakeshore operations, administration, or surrounding land uses might be present, including residential areas, lakeshore maintenance yards, access roads, parking, and utility corridors.</p>
<b>Paved Road</b>	<p>Designed to accommodate all vehicle types. Slightly wider and less winding than primitive roads.</p> <p>Has paved surface.</p> <ul style="list-style-type: none"> <li>• Higher design standard would require more resource modification than for primitive roads.</li> <li>• Forest canopy might be open to accommodate road width.</li> </ul>	<p>Used for reaching destinations and for scenic touring.</p> <p>Might include primary access routes to lakeshore features.</p> <p>Vehicles would travel at moderate speeds.</p> <p>There would be a good chance of encountering other vehicles.</p> <p>Would be available to all visitors, regardless of vehicle type.</p>	<p>Paved roads, with associated pullouts, trailheads, parking areas, and wayside exhibits.</p> <p>Driving, bicycling, horses, and snowmobiles would be appropriate.</p>

Management Prescription	Resource Condition or Character	Visitor Experience (what the visitor sees, feels, encounters)	Appropriate Activities or Facilities (what the visitor is doing, what facilities may be appropriate)
<b>Improved Gravel Road</b>	Designed to accommodate all vehicle types. Slightly wider and less winding than primitive roads. Gravel base with regular grading. Higher design standard would require more resource modification than for primitive roads. Dusty conditions might exist at times. Forest canopy might be open to accommodate road width.	Used for reaching destinations and for scenic touring. Vehicles would travel at fairly slow speeds. Moderate chance of encountering other vehicles. Available to all visitors, regardless of vehicle type.	Improved gravel roads with associated pullouts, trailheads, parking areas, and wayside exhibits. Cars, bicycles, horses, and snowmobiles would be appropriate.

Management Prescription Notes:

1. In general, motorized NPS administrative use and access would be consistent with visitor restrictions on motorized use. (NPS staff would generally abide by the same rules as visitors.)
2. Treatment of cultural resources would be based on the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
3. Sanctioned uses of national lakeshore resources by affiliated tribes would be managed through visitor use management and permits.

## NO-ACTION ALTERNATIVE

### CONCEPT AND GENERAL MANAGEMENT STRATEGIES

This alternative describes a continuation of existing management at Pictured Rocks National Lakeshore. It provides a baseline for evaluating the changes and impacts of the other alternatives. The National Park Service would continue to manage Pictured Rocks as it has in the past. Managers would continue to follow the special mandates and servicewide mandates and policies described earlier in the "Guidance for the Planning Effort" section of this document, as staffing and budget allow.

Existing operations and visitor facilities would remain in place, concentrated at the west and east ends of the lakeshore, while the central portion would continue to be preserved in a primitive, relatively undisturbed state (see No-Action Alternative map). No new construction would be authorized. A diversity of visitor use facilities from backcountry to drive-in campsites; primitive trails to boardwalks; unpaved to paved roads; and self-directed interpretation to ranger-led programs would continue to be provided.

The national lakeshore would continue to be managed for the perpetuation and protection of the natural environment and the preservation of cultural features while making them available for appropriate public use. Natural ecological processes would continue to be allowed to occur, and restoration programs would continue or would be initiated where necessary. Some significant cultural resources would be preserved, upgraded, and/or adaptively used, and nonsignificant cultural resources would be adaptively used or left alone. Locally promulgated zoning would continue as the basic management tool in the inland buffer zone.

Managers would place few additional limits on visitor use (unless unacceptable resource

or visitor use impacts were occurring). Thus visitation could likely increase throughout most of the national lakeshore. National lakeshore staff would continue to enforce current backcountry use management policies that permit camping only in designated sites. Permits would continue to be required for overnight backcountry use. Managers would also continue to regulate use by motorized boats, snowmobiles, and off-road-vehicles. On Lake Superior waters within the national lakeshore (within 0.25 mile from shore), motorized and nonmotorized boating would continue.

The National Park Service would continue its active role in monitoring and/or influencing commercial and private activities that affect resources in the lakeshore. Concession structures would not be added to the lakeshore. Local communities would be encouraged to provide visitor services, and County Road H-58 (owned and maintained by Alger County) would likely remain a mix of paved and unpaved road. Commercial boat tours of the pictured rocks would continue.

The inland buffer zone would continue to be managed to preserve the natural setting, protect watersheds and streams, allow reasonable use by private landowners, and permit sustained-yield harvesting of timber.

### WESTERN PORTION OF THE NATIONAL LAKESHORE

In the western (Munising) end of the national lakeshore, visitor use would continue to be concentrated at Munising Falls, Sand Point, the Miners area, and along the North Country National Scenic Trail. The only overnight use in the west end would occur at backcountry campsites.

No-Action Alternative

map

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Visitor orientation, information, and back-country permits would continue to be available in Munising (at the NPS/USFS visitor information center), Munising Falls, and Miners Castle. The area's cultural history would continue to be interpreted at the former Sand Point Coast Guard Station, and preservation treatment would continue there, as would use of some structures as seasonal residences, administrative offices, and/or museum storage. Adaptive use of the boat-house would continue. Private tour boats would continue tours of the pictured rocks from Munising to Chapel Beach. The Schoolcraft Furnace and kilns would continue to be protected and interpreted.

Administrative headquarters would remain in the old Coast Guard Station at Sand Point and at the Munising Range Light Station. Lakeshore maintenance activities would continue to be based at the maintenance facility just off H-58 near Munising.

County Road H-58 would remain a paved road in the west end of the national lakeshore.

### **CENTRAL PORTION OF THE NATIONAL LAKESHORE**

In the shoreline zone the central portion of the lakeshore (especially Chapel and Beaver Basins) would continue to be preserved and managed in a relatively primitive, undisturbed state. Visitor use would be more dispersed than in the east and west ends, although some concentration of visitors would occur at popular natural features and campgrounds. Day uses (e.g., hiking and fishing) and overnight uses (e.g., camping and backpacking) would be common in the backcountry. Car camping opportunities would continue to be available at Little Beaver Lake and Twelvemile Beach campgrounds. On the Beaver Lakes boat motors would continue to be limited to 10 horsepower or less.

There would be few visitor orientation, information, or interpretation services in the central portion of the national lakeshore. County Road H-58 would remain a paved road west of Little Beaver Lake road and would likely remain an unpaved road (some sections gravel, some rough sand) east of Little Beaver Lake road to the Grand Sable Lake overlook.

The inland buffer zone would continue to be managed to preserve the natural setting, protect watersheds and streams, allow reasonable use by private landowners, and permit sustained-yield harvesting of timber.

### **EASTERN PORTION OF THE NATIONAL LAKESHORE**

In the eastern (Grand Marais) end of the national lakeshore, visitor use would be concentrated around Hurricane River, Twelvemile Beach, Au Sable Light Station, Log Slide, Grand Sable Lake and falls, and along the North Country National Scenic Trail. Car camping would continue at Hurricane River campground. Boating on Grand Sable Lake (including motorboats with motors 50 horsepower or less) would continue.

Efforts to rehabilitate main building exteriors and renovate main building interiors at the Au Sable Light Station would continue, as would preservation treatment and the guided tours.

Grand Sable Dunes would continue to be managed as a research natural area.

Visitor orientation and information would continue to be available at the Grand Sable visitor center and the Grand Marais Maritime Museum/ranger station. Interpretation of the area's cultural history would continue at the Au Sable Light Station and the Grand Marais Maritime Museum. Some of the items in the national lakeshore's collection are exhibited in the Grand Marais Maritime Museum. The Abrahamson Farm barn would continue to be preserved and used for storage. The

environmental conditions for the museum collection in the museum and at the Abrahamson barn are substandard.

The use of some structures associated with the Grand Marais Coast Guard Station and Grand Marais Harbor of Refuge quarters that have been stabilized would continue being used as seasonal residences, administrative offices, or museum/storage space. Preservation treatment would continue at both sites. Management of adjacent land (parking lot, etc.) at the Grand Marais Coast Guard Station would be transferred from the Coast Guard and Army Corps of Engineers to the National Park Service.

Administration in the east end would continue to be divided between the Grand Marais ranger station and the Grand Sable visitor center. The east end maintenance staff and facilities would continue to be divided between the visitor center and the substandard facility at Grand Marais.

The Grand Marais Harbor of Refuge keepers quarters would continue to be leased to the Grand Marais Historical Society. County Road H-58 would likely remain unpaved (some sections gravel, some rough sand) west of the Grand Sable Lake overlook and paved east of the overlook.

The inland buffer zone would continue to be managed to preserve the natural setting, protect watersheds and streams, allow reasonable use by private landowners, and permit sustained-yield harvesting of timber as

defined in the national lakeshore's establishing legislation.

## **WILDERNESS**

There would be no wilderness proposed for designation at Pictured Rocks National Lakeshore.

## **COSTS**

Costs are given for comparison to other alternatives only and are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a mid-point in a possible range of costs. The costs developed are total life-cycle costs, which are inclusive of all initial costs (new development including transportation infrastructure costs, rehabilitation, interpretive media, etc.), replacement costs, and recurring annual costs such as national lakeshore operations.

All of these costs are projected out for 25 years, and are shown as the worth in today's dollars. For a more detailed explanation of life-cycle costs, please refer to the "Development of GMP Cost Estimates" section earlier in this chapter. The initial capital cost for the no-action alternative is assumed to be zero because no new capital expenditures would be proposed. The recurring or replacement costs would be \$20,170,000. The recurring annual costs would be \$943,000. The total life-cycle cost for this alternative would be \$21,113,000.

## PREFERRED ALTERNATIVE

### HOW THIS ALTERNATIVE WAS DEVELOPED

Public comment on the draft alternatives showed strong support for both alternatives C and D as presented in *Newsletter 3* and through a series of public meetings. Many people favored wilderness designation within the national lakeshore while many others were concerned about ease of access to lakeshore features and the effect wilderness designation would have on that access. An analysis of the alternatives showed that many public concerns could be met with a blending of these two concepts along with some elements described in alternative B and still be within the purposes of the national lakeshore. Starting with the original alternative D, the team added some of the watershed protection measures from alternative B and then incorporated alternative C actions that would improve public access to significant national lakeshore features (see Preferred Alternative map).

### CONCEPT AND GENERAL MANAGEMENT STRATEGIES

The preferred alternative would expand opportunities for visitor use in the national lakeshore while preserving the central portion of the national lakeshore in a primitive, relatively undisturbed state. The national lakeshore would be managed for the perpetuation and protection of the natural environment and the preservation of cultural features while making them available for appropriate public use. The preferred alternative would also provide additional and more convenient access to significant national lakeshore features on the west and east portions of the national lakeshore. The diversity of visitor experience opportunities would also be maintained in a way that would not further degrade resources. The operational effectiveness of the national

lakeshore would be improved. Several significant cultural resources would be preserved, upgraded, and/or adaptively used, and nonsignificant cultural resources would be adaptively used or left alone.

Commercial boat tours of the pictured rocks would continue with recommendations made to tour boat operators to reduce the noise coming from the tour boat public address system so that intrusion on the natural quiet would be minimized.

Grand Sable Dunes would continue to be managed as a research natural area (see glossary and Preferred Alternative map).

Locally promulgated zoning would continue as the basic management tool in the inland buffer zone. Cooperative management of the Lake Superior watershed with other entities (such as the U.S. Forest Service, Michigan Department of Natural Resources, ForestLand Group, Limited Liability Corporation] and other private landowners) would be emphasized. Operational facilities would be consolidated at the ends of the national lakeshore for efficiency.

Federal lands in the Beaver Basin area in the national lakeshore, except Little Beaver Lake campground and access road, would be proposed for designation as wilderness. Vehicular access to Little Beaver Lake campground would continue; however structures within the proposed wilderness would be removed. Other roads in Beaver Basin would be closed and converted to trails or allowed to revert to natural vegetation.

To accommodate possible increased use and to increase ease of access in the portion of the national lakeshore not proposed for wilderness, certain roads would be upgraded (upgrading portions of County Road H-58 would be recommended), and a rustic campground (comparable in character to

Hurricane River and Twelvemile River campgrounds) would be added in the Miners Castle area. All improvements would depend on meeting national environmental and cultural compliance and resource protection laws.

Visitor use limits generally would not be imposed in the orientation/history, casual recreation, or mixed use prescriptions, unless dictated by facility design capacities, to protect resources, or to ensure levels of visitor experience. Existing backcountry use management policies would be continued, and additional visitor use limits could eventually be imposed to achieve desired resource or social conditions in the primitive and pristine prescription areas.

Managers would continue to follow the special mandates and servicewide mandates and policies described earlier in the "Guidance for the Planning Effort" section of this document.

## **MANAGEMENT PRESCRIPTIONS AND RELATED ACTIONS**

The greatest proportion of the national lakeshore (about 51%) would be managed under the mixed-use prescription. The primitive prescription would cover about 30%, and the casual recreation prescription would cover about 9%. The developed management prescription would cover about 6%, and about 3% of the national lakeshore (the Grand Sable Dunes area) would be managed as pristine. The orientation/history prescription would cover about 1%. (See table 3 at the end of the description of the alternatives for a comparison of the balance of management prescriptions.)

There would be about 10 miles of the paved road prescription, 20 miles of the improved gravel road prescription, and no primitive road prescription in the preferred alternative. These figures do not include H-58 because the county has responsibility for this road.

The remainder of this discussion describes how different areas of the national lakeshore would be managed and what actions the National Park Service would take under the preferred alternative. These actions are those believed most likely to take place over the next 15 years in the national lakeshore given the preferred alternative's concept, management prescriptions, the conditions that already exist in the lakeshore, and the lakeshore's environmental constraints. Under this alternative, where possible, any new facilities would be constructed in already disturbed areas. Disturbance to sensitive areas such as threatened and endangered species habitat and archeological sites would also be avoided or mitigated whenever possible. (See "Mitigation" section.)

### **Orientation/History Prescription**

The NPS/USFS information center at Munising would be managed according to the orientation/ history prescription. This would require no change in management.

Munising Falls, Sand Point, and the Schoolcraft Furnace and kilns would also be managed as orientation/history. The furnace and kilns would continue to be protected.

Once the lakeshore headquarters function was relocated away from Sand Point and Munising Range Light Station to the proposed Munising headquarters facility adjacent to the Munising maintenance facility, a portion of Sand Point would be managed to provide visitors with opportunities to learn about Coast Guard history. (The Munising Range Light Station would be in the developed prescription while being used for administrative purposes.) The Sand Point Coast Guard station and boat-house would be rehabilitated/ preserved to protect the architectural values associated with their period of significance (1933-46, with an emphasis on the 1940s era). The cultural landscape would be restored in line with recommendations from a future cultural

Preferred Alternative

map

back of map

landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*) to reflect the ambiance and most significant elements of this period. The site would also be actively interpreted. The first floor of the Coast Guard station would be restored to the 1940s Coast Guard era, and the boathouse would be interpreted (with a 1940s focus).

When the Munising Range Light Station is no longer needed for administrative purposes, the site would be interpreted as a component of the national lakeshore's preservation and interpretation of the Lake Superior maritime history and the U.S. Coast Guard involvement in the region. It is the national lakeshore's intention to manage and maintain this property as a historic site. The station would be rehabilitated, preserved, and adaptively used for temporary staff offices until the new administration facility is completed on County Road H-58. (The U.S. Coast Guard would continue to maintain the operating aids to navigation [the front and rear range lights] that comprise two of the six structures on the property.) The cultural landscape would be restored to reflect the ambiance and significant elements of the period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). Interpretation of the site would be via onsite wayside exhibits.

The Miners Castle area, which provides easy access to a popular geologic feature and to the Lake Superior shoreline, would be managed as orientation/history in this alternative. Opportunities for visitors to become oriented to the national lakeshore and learn about lakeshore resources would be available.

The Au Sable Light Station area would be managed as orientation/history. Visitors would be able to get to the light station by a trail, and light station tour and day hiking opportunities would be available. The exteriors of the small ancillary structures would be rehabilitated, and the interiors would be renovated for historic interpretation and adaptive use. Preservation treatment that meets the *Secretary of the Interior's Standards for the Treatment of Historic Properties* would also be done on the smaller structures to protect the station's architectural and interpretive values. The cultural landscape would be restored to reflect the early 1900s time period based on the approved 1998 "Cultural Landscape Report." Restrooms and utilities would also be added without detracting from the historic scene.

In the Grand Marais area, the Abrahamson Farm barn (adjacent to the Grand Sable visitor center) would be rehabilitated, and the cultural landscape would be restored to a facsimile of its period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). For example, some farm fields might be cleared, some orchards might be managed, and certain fields might be leased for growing hay.

The Grand Marais Coast Guard Station, which would also be managed as orientation/history, would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its 1940s period of significance, in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). Management of adjacent land (parking lot, etc.) would be transferred from the Coast Guard and

Army Corps of Engineers to the National Park Service. All management actions would be consistent with re-creation of the 1940s historic scene. Because the administrative offices and maintenance function would move to the new east-end administration/maintenance facility, there would likely be increased space for the Maritime Museum.

The Grand Marais Harbor of Refuge quarters would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*).

The Grand Sable visitor center and the Grand Marais Maritime Museum would be managed as orientation/history to provide opportunities for comprehensive interpretation of agricultural and maritime history. The desired conditions would be that visitors are well oriented as they enter the lakeshore from the east and are able to obtain any permits they need.

### Casual Recreation Prescription

An area between Munising Falls and Miners Beach would be managed as casual recreation. The Miners area (except Miners Castle) would be managed for casual recreation to allow construction of a new drive-in campground (25-35 sites), similar in character and size to the Twelvemile Beach and Hurricane River campgrounds and trails. An exception to this would be that Miners Lake would be nonmotorized.

At the Becker farm, the open-field characteristics of the historic farmstead would be preserved.

A corridor including the trails to Chapel Falls and Chapel Beach would be managed as casual recreation. The juxtaposition of beach, inland lake, cliffs, waterfalls, and views would provide a key visitor experience for national lakeshore visitors. The casual recreation prescription would allow for more formal/hardened trails to be provided to protect resources. Portions of the trail could be accessible to people with disabilities. (Note: Chapel Lake would not be included in this prescription. It would be managed as primitive.)

The National Park Service would encourage management of Kingston Lake and the adjacent state forest campground in a manner consistent with the casual recreation prescription and to maintain the existing visitor opportunities at this popular state-managed recreation area.

The Twelvemile Beach and Hurricane River campground areas would also be managed as casual recreation. This would mean no change at the Twelvemile Beach campground. A detailed site plan for redesign of the Hurricane River campground/Au Sable Light Station area would be developed. Desired conditions for the redesigned area include better protection of the wet areas adjacent to the lower campground loop, improved vehicular circulation, and better separation of campground activities from day uses. The site plan should consider removing the lower campground loop and converting a portion of this area to day use parking to serve Au Sable Light Station visitors. The park staff would attempt to find a suitable location for a replacement loop if the current lower loop were removed.

An exception to this zone would be the retention and administrative use of Sullivan's cabin located between Hurricane River and Twelvemile campgrounds.

The Log Slide area would be managed as casual recreation (no changes in management would be anticipated).

Access to east-end facilities and attractions would be improved, and recreational opportunities would be expanded. Boat-in campsites at Grand Sable Lake would be added. Motorized boating at Grand Sable lake would continue with limits on horsepower (50 horsepower or less).

From the west lakeshore boundary to Spray Falls, the 0.25 mile-wide strip of Lake Superior within the lakeshore would be in the casual recreation management prescription. Motorized and nonmotorized boating access from Lake Superior could continue. Tour boats would continue to provide tours of the pictured rocks with the recommendation that noise from the public address system be reduced so that intrusion on the natural quiet would be minimized. The 0.25-mile-wide Lake Superior strip from the mouth of Sevenmile Creek to the east boundary near Grand Marais would also be managed as casual recreation.

Personal watercraft would be allowed to launch from a designated launch site (currently Sand Point) and operate on Lake Superior within the national lakeshore boundary from the western boundary up to the east end of Miners Beach. Personal watercraft users would be allowed to beach their craft on Miners Beach. Personal watercraft would not be allowed to launch or operate elsewhere within the national lakeshore.

### **Mixed Use Prescription**

The mixed use management prescription would be applied to the inland buffer zone in both the eastern and western portions of the national lakeshore but not the central (Beaver Basin) portion of the national lakeshore (see Preferred Alternative map). Mixed-use areas

would be managed to continue opportunities for extractive and recreational activities as authorized in the legislation that established the national lakeshore. The National Park Service would continue cooperative management and zoning in these areas. Management of these areas would not be significantly different than current management.

Consistent with the enabling legislation, national lakeshore managers are interested in using part of the inland buffer zone as a demonstration forest. The national lakeshore is the only national park system unit that has a legislated buffer zone, which provides the National Park Service with a unique opportunity to partner with outside industry in order to explain the importance of sustainable timber practices, the logging industry in the Upper Peninsula, and its connection to the national lakeshore.

### **Pristine Prescription**

Grand Sable Dunes would be managed under the pristine prescription, which reinforces its status as a research natural area. Natural conditions and special resources associated with the dune system would be maintained. This would not constitute a change in management.

### **Primitive Prescription**

The middle portion of the 0.25-mile-wide strip of Lake Superior from Spray Falls to the mouth of Sevenmile Creek would be managed under the primitive prescription. Motorized boats would no longer be permitted to use these waters, which is consistent with the primitive management prescription and supports wilderness values and opportunities for wilderness recreation on adjacent wilderness lands in Beaver Basin.

An area between Miners Beach and Spray Creek (including most of Chapel Basin) and

Chapel Lake would be managed as primitive (essentially no change in management).

Beaver Basin, including Beaver Lakes, would be managed as primitive to provide opportunities for relatively remote, wild experiences and to maintain natural conditions in this wild area. Primitive trails and backcountry campgrounds would be allowed. Except for the Little Beaver Lake road, all roads (two-tracks) would be closed and allowed to revert to natural conditions, and motorized boats would no longer be allowed on Little Beaver and Beaver Lakes. The Little Beaver Lake campground (eight campsites, vault toilet, boat launch ramp and small parking lot) is in this zone, but would continue to be managed as a small drive-in campground and would be an exception to the primitive zone prescription.

An area roughly between Log Slide eastward to Grand Sable Lake would be managed as primitive (essentially no change in management). At Grand Sable Lake new boat-in campsites would be added.

### **Developed Prescription**

The existing lakeshore maintenance facility off H-58, near Munising, would be managed under the developed prescription. The lakeshore headquarters function would be relocated from Sand Point and the Munising Range Light Station to this area. (The building currently used for headquarters is too small to accommodate current staff and is substandard with respect to utilities and accessibility.) A new administration building (approximately 20,000 square feet including garage and storage), would include curatorial space that would be consistent with NPS standards and would be built on land that was prepared for this building during the construction of the Munising maintenance facility.

Landowners of areas along Carmody Road, Monette Road, and Chapel Road would be

encouraged to continue to manage these areas consistent with the intent of the developed prescription, thus allowing private residential use and residential development to continue.

Likewise, landowners of areas in the inland buffer zone near Miners Castle Road, around Shoe Lakes, and around Kingston Lake would be encouraged to manage these areas consistent with the intent of the developed prescription to allow for future private residential use and development. (This is consistent with current county and/or township zoning.) The east-end administrative and maintenance functions would be consolidated in a new facility (about 6,700 square feet) in a developed area near Grand Marais. The existing maintenance facility would be removed.

### **Road Prescriptions**

From the NPS perspective, an improved gravel road surface within the lakeshore boundary would generally be acceptable for County Road H-58. An improved gravel road would improve access to national lakeshore features while preserving opportunities for diverse vehicular traveling experiences in the national lakeshore. Any improvements to H-58 should maintain a low-speed road that preserves the forest canopy, rustic character, scenic qualities, and archeological resources wherever possible. Paving H-58 would also be acceptable to the National Park Service.

County plans to pave H-58 between the Log Slide access road and Grand Sable Lake are being implemented.

Grand Sable Lake road, Log Slide road, Miners Castle road, the proposed Miners campground road, a portion of Miners Beach Road, and Sand Point road would also be managed under the paved road prescription to provide easy access to primary national lakeshore features or to private residential areas. This would require paving Grand Sable

Lake road and Log Slide road (the others are already paved).

Roads managed under the improved gravel road prescription would include Miners Beach road, Chapel road, and Twelvemile Beach and Hurricane River campground and access roads. The intent would be to provide safe and relatively easy access to primary national lakeshore features in these areas. A portion of Chapel Road would require improvement to conform to the improved gravel road prescription.

The Beaver Basin overlook road would be kept to maintain access to timber and to trailhead parking at the overlook. This road would be improved and managed under the improved gravel road prescription.

## **WILDERNESS**

The National Park Service would propose 12,843 acres (about 18% of the national lakeshore) for wilderness designation under the preferred alternative (see wilderness boundary, Preferred Alternative map). The area proposed for wilderness includes Beaver Basin (except for the Little Beaver Lake, campground, and road corridor). All of the area proposed for wilderness is within the shoreline zone designated by Congress (PL 89-668).

Areas proposed for wilderness designation would be managed under the primitive prescription. The primitive management prescription is consistent with desired wilderness conditions.

## **COSTS**

Costs are given for comparison to other alternatives only and are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a mid-point in a possible range of costs. The costs developed are total life-cycle costs, which are inclusive of all initial costs (new development including transportation infrastructure costs, rehabilitation, interpretive media, etc.), replacement costs, and recurring annual costs such as national lakeshore operations.

All of these costs are projected out for 25 years, and shown as the worth in today's dollars. For a more detail explanation of life cycle costs, please refer to the "Development of GMP Cost Estimates" section earlier in this chapter. The initial capital cost for the preferred alternative is \$23,078,000. The recurring or replacement costs would be \$1,154,000. The recurring annual costs would be \$25,529,000. The total life-cycle cost for this alternative would be \$49,761,000.

Improving 16.6 miles of H-58 to a gravel surface would cost an additional \$8.5 million. These costs are the responsibility of Alger County and would not be incurred by the National Park Service.

## ALTERNATIVE A

### CONCEPT AND GENERAL MANAGEMENT STRATEGIES

In alternative A management of the national lakeshore would be very similar to the no-action alternative. The concept for alternative A was developed in response to public comment that people were essentially pleased with the national lakeshore as it is, but they had a few suggestions for improvement. The differences between the no-action alternative and alternative A reflect the most often heard suggestions and ideas from the previous management plan that are still considered viable but have not been implemented.

Administration and maintenance functions would be consolidated in new facilities near Munising and Grand Marais. Visitor facilities would remain in place, and a new campground would be provided. Facilities would continue to be concentrated at the ends, while the central portion of the national lakeshore would be preserved in a relatively primitive, undisturbed state. A diversity of visitor use facilities and experience opportunities throughout the national lakeshore would be provided. (see Alternative A map). Otherwise, the National Park Service would continue to manage Pictured Rocks as it has in the past. National lakeshore managers would continue to follow the special mandates and service-wide mandates and policies described earlier in the "Guidance for the Planning Effort" section of this document.

The national lakeshore would be managed for the perpetuation and protection of the natural environment and the preservation of cultural features while making them available for appropriate public use. No wilderness would be proposed. Natural ecological processes would be allowed to occur, and restoration programs would be initiated where necessary. Several significant cultural resources would be preserved, upgraded, and/or adaptively used,

and other cultural resources would be adaptively used or left alone.

National lakeshore managers would place few limits on visitor use, thus visitation could increase throughout most of the national lakeshore. National lakeshore staff would continue to enforce current backcountry use management policies of permitting camping only in designated sites. Permits would be required for overnight backcountry use. National lakeshore managers would also continue to regulate use by motorized boats, snowmobiles, and off-road-vehicles. Motorboat use on inland lakes would continue.

The National Park Service would continue its active role in monitoring and/or influencing commercial and private activities that affect resources in the lakeshore. Concession structures would not be added to the lakeshore. Local communities would be encouraged to provide visitor services.

Commercial boat tours of the pictured rocks would continue with recommendations made to tour boat operators to reduce the noise coming from the tour boat public address system so that intrusion on the natural quiet would be minimized.

Locally promulgated zoning would continue as the basic management tool in the inland buffer zone.

Paving H-58 would from Munising to Grand Marais would be the recommended county action under this alternative.

### MANAGEMENT PRESCRIPTIONS AND RELATED ACTIONS

The greatest portion of the national lakeshore (48%) would be managed under the

Alternative A

map

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mixed-use prescription. The casual recreation prescription would cover about 20%, and the primitive prescription would cover about 18%. The developed management prescription would cover 10%, and about 3% (Grand Sable Dunes area) would be managed as pristine. The orientation/history prescription would cover 1%, and (See table 3 at the end of the description of the alternatives for a comparison of the balance of management prescriptions.)

There would be about 9 miles of the paved road prescription, about 12 miles of the improved gravel prescription, and about 3 miles of the primitive prescription.

The remainder of this discussion describes how different areas of the national lakeshore would be managed and what actions the National Park Service would take under alternative A. These actions are those believed most likely to take place over the next 15 years in the national lakeshore given alternative A's concept, management prescriptions, the conditions that already exist in the lakeshore, and the lakeshore's environmental constraints. Under this alternative, new facilities would be constructed in already disturbed areas where possible. Disturbance to sensitive areas such as threatened and endangered species habitat and archeological sites would also be avoided or mitigated whenever possible.

### **Orientation/History Prescription**

The NPS/USFS information center at Munising, is where visitors to the national lakeshore and nearby Hiawatha National Forest obtain information about recreational opportunities and obtain backcountry permits. The center would be managed according to the orientation/history prescription (no change in management).

Munising Falls, Sand Point, and the Schoolcraft furnace and kilns would also be

managed as orientation/history. The furnace and kilns would continue to be protected.

Once the lakeshore headquarters function was relocated away from Sand Point and the Munising Range Light Station to the Munising administration facility area adjacent to the Munising maintenance facility, visitors would have opportunities to learn about Coast Guard history at Sand Point. (The Munising Range Light Station would be in the developed prescription while being used for administrative purposes.) The Sand Point Coast Guard station and boat house would be rehabilitated/ preserved and adaptively use to protect the architectural values associated with their period of significance (1933-46, with an emphasis on the 1940s era). The cultural landscape would be restored to reflect the ambiance and most significant elements of this period in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). The site would also be actively interpreted. The first floor of the Coast Guard station would be restored to the 1940s Coast Guard era, and the boat house would be interpreted (with a 1940s focus).

When the Munising Range Light Station is no longer needed for administrative purposes, the site would be interpreted as a component of the national lakeshore's preservation and interpretation of the Lake Superior maritime history and the U.S. Coast Guard involvement in the region. It is the national lakeshore's intention to manage and maintain this property as a historic site. The station would be rehabilitated, preserved, and adaptively used for temporary staff offices until the new administration facility is completed on County Road H-58. (The U.S. Coast Guard would continue to maintain the operating aids to navigation [the front and rear range lights] that comprise two of the six structures on the

property.) The cultural landscape would be restored to reflect the ambiance and significant elements of the period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). Interpretation of the site would be via onsite wayside exhibits.

The Miners Castle area provides easy access to a popular geologic feature and to the Lake Superior shoreline. This area would be managed as orientation/history in this alternative. Opportunities for visitors to become oriented to the national lakeshore and learn about lakeshore resources would be available.

The Au Sable Light Station area would be managed as orientation/history. Visitors would be able to easily get to the light station via a trail, and light station tour and day hiking opportunities would be available. The exteriors of the small ancillary structures would be rehabilitated, and the interiors would be renovated for historic interpretation and adaptive use. Preservation treatment that meets the *Secretary of the Interior's Standards for the Treatment of Historic Properties* would also be done on the smaller structures to protect the station's architectural and interpretive values. The cultural landscape would be restored to reflect the early 1900s time period based on the approved 1998 "Cultural Landscape Report." Restrooms and utilities would also be added without detracting from the historic scene.

The Abrahamson Farm barn, adjacent to the Grand Sable visitor center, would be rehabilitated, and the cultural landscape would be restored to a facsimile of its period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of*

*Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). For example, some farm fields might be cleared, some orchards might be managed, and certain fields might be leased for growing hay.

The Coast Guard Station in Grand Marais, also managed as orientation/ history, would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its 1940s period of significance, in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*) and a site plan for improvements (comfort station, parking, and access for visitors with disabilities) would be developed; management of adjacent land (parking lot, etc.) would be transferred from the Coast Guard and Army Corps of Engineers to the National Park Service. All management actions would be consistent with re-creation of the 1940s historic scene. Because the administrative offices and maintenance function would move to the new east-end administration/ maintenance facility, there would likely be increased space for the Maritime Museum.

The Grand Marais Harbor of Refuge quarters would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*).

The Grand Sable visitor center and the Grand Marais Maritime Museum would be managed as orientation/history to provide opportunities for comprehensive interpretation of agricultural and maritime history. The desired conditions would be that visitors are well

oriented as they enter the lakeshore from the east and are able to obtain any permits they need.

### **Casual Recreation Prescription**

The area between Munising Falls and the east end of Miners Beach would be managed as casual recreation. A new drive-in campground, similar in character and size to the existing Twelvemile Beach and Hurricane River campground (25-35 sites), and trails would be built in the Miners area. Beaver Lakes would also be managed under the casual recreation prescription to maintain the current rustic drive-in camping experience and boating opportunities. An exception to this would be that Miners Lake would be managed as nonmotorized.

At the Becker farm, the open-field characteristics of the historic farmstead would be preserved.

The Twelvemile Beach and Hurricane River campground areas would also be managed as casual recreation. This would mean no change at the Twelvemile Beach campground. A detailed site plan for redesign of the Hurricane River campground/Au Sable Light Station area would be developed. Desired conditions for the redesigned area include better protection of the wet areas adjacent to the lower campground loop, improved vehicular circulation, and better separation of campground activities from day uses. The site plan should consider removing the lower campground loop and converting a portion of this area to day use parking to serve Au Sable Light Station visitors. A replacement campground loop could be constructed only if a suitable location could be found.

The Log Slide area would be managed as casual recreation, and easy access to this popular area would be maintained (requiring no change from existing management).

At the east end of the lakeshore an area around Grand Sable Lake and Sable Falls would be managed as casual recreation to maintain recreational opportunities and access. At Grand Sable Lake motorized boat use (50 horsepower or less) would continue.

The 0.25-mile-wide strip of Lake Superior surface waters within the national lakeshore would be in the casual recreation management prescription, so motorized and nonmotorized boating activities and access from Lake Superior would continue. Recommendations would be made to tour boat operators to reduce the noise coming from the tour boat public address system so that intrusion on the natural quiet would be minimized.

The National Park Service would encourage management of Kingston Lake and the adjacent state forest campground to be managed consistent with the casual recreation prescription and to maintain the existing visitor opportunities at this popular state-managed recreation area.

### **Mixed Use Prescription**

The mixed use management prescription in alternative A would be in most of the inland buffer zone and within the shoreline zone in an area just east of Beaver Basin (see Alternative A map). Mixed use areas would be managed to continue opportunities for extractive and recreational activities. The National Park Service would seek to continue cooperative management or zoning arrangements with other landholders in these areas.

### **Pristine Prescription**

Grand Sable Dunes would be managed under the pristine prescription, consistent with its status as a research natural area. Natural conditions and special resources associated with the dune system would be maintained; there would be no change in management.

### **Primitive Prescription**

Beaver Basin would be managed under the primitive prescription to maintain opportunities for a relatively remote backcountry experience. Dispersed use would continue. An old garage structure would be removed, a gravel pit would be reclaimed, and two track roads in the area would be allowed to gradually revert to more natural conditions. Chapel Basin would also be managed as primitive (essentially no change).

### **Developed Prescription**

The developed management prescription would be for areas that are primarily administrative or private residential. The area around the national lakeshore maintenance facility off H-58, near Munising, would be managed as developed. The lakeshore headquarters function would be relocated from Sand Point and the Munising Range Light Station to this area. A new administration building (about 20,000 square feet), would include curatorial space that is consistent with NPS standards and would be built on land that was prepared for the new building during construction of the Munising maintenance facility.

The areas along Carmody Road, Monette Road, and Chapel Road would be managed as developed to allow private residential use to continue.

Landowners of areas in the inland buffer zone near Miners Castle Road, around Shoe Lakes, south of Log Slide, and around Kingston Lake would be encouraged to manage these lands consistent with the intent of the developed prescription to allow for future private residential use and development. (This is consistent with current county and/or township zoning.)

East-end administrative and maintenance functions would be consolidated in a new facility (about 6,700 square feet) near Grand

Marais. (The existing maintenance facility would be removed; it consists of a few converted farm buildings and is substandard and too small).

### **Road Prescriptions**

The county would be encouraged to pave the entire stretch of County Road H-58 from Munising to Grand Marais to provide easy access along the national lakeshore's principal transportation route. This would involve paving sections that are gravel or sand (about 60% of the road between Munising and Grand Marais). Other paved roads would include Sand Point, Carmody (except the east-west portion), Miners Castle, Monette, a portion of Miners Beach Road, and Sable Falls roads (no change from existing conditions).

The Little Beaver Lake road would be managed as an improved gravel road (no change). Other improved gravel roads would include Miners Falls and Beach roads, Chapel Road, Little Beaver Lake road, Twelvemile and Hurricane campground and access roads, Log Slide road, and the Grand Sable Lake roads (no change from existing conditions).

The Beaver Basin overlook road would be managed according to the primitive road prescription (no change from existing conditions).

### **WILDERNESS**

There would be no proposal to designate wilderness at Pictured Rocks National Lakeshore.

### **COSTS**

Costs are given for comparison to other alternatives only and are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a

mid-point in a possible range of costs. The costs developed are total life-cycle costs, which are inclusive of all initial costs (new development including transportation infrastructure costs, rehabilitation, interpretive media, etc.), replacement costs, and recurring annual costs such as national lakeshore operations.

All of these costs are projected out for 25 years, and shown as the worth in today's dollars. For a more detailed explanation of life cycle costs, please refer to the "Development of GMP Cost Estimates" section earlier in this

chapter. The initial capital cost for alternative A is \$11,283,000. The recurring or replacement costs would be \$943,000. The recurring annual costs would be \$24,623,000. The total life-cycle cost for this alternative would be \$36,850,000.

Improving 20 miles of H-58 to a paved surface would cost an additional \$18.5 million. These costs are the responsibility of Alger County and would not be incurred by the National Park Service.

## ALTERNATIVE B

Alternative B was eliminated from consideration.

## ALTERNATIVE C

### CONCEPT AND GENERAL MANAGEMENT STRATEGIES

Alternative C responds to public comments about making the national lakeshore an easier and more convenient place to visit. While much of the lakeshore would remain in a natural state, additional facilities and infrastructure would be provided to accommodate use and make it easier to get to primary lakeshore features like waterfalls, lakes, cultural resources, and the Lake Superior shoreline. Opportunities to understand and appreciate the lakeshore's history would be enhanced by expanded access at significant cultural sites. Ways to accommodate additional recreational use and to continue to provide a diversity of uses and experience opportunities throughout the national lakeshore would be explored.

Vehicular access and/or improved pedestrian access would be provided to additional lakeshore areas, features, and significant cultural resources. Many roads would be paved or improved to increase ease of access for visitors. The county would be encouraged to pave the entire stretch of County Road H-58 from Munising to Grand Marais to provide easy access along the national lakeshore's principal transportation route. Facilities and infrastructure would be improved with the addition of a drive-in campground and the construction of a new overlook and access road. Several cultural landscapes would be restored and interpreted. Operational and administrative facilities would be consolidated near Munising and Grand Marais for efficiency. Local communities would be encouraged to provide visitor services because concession structures would not be added to the lakeshore.

Commercial boat tours of the pictured rocks would continue with recommendations made to tour boat operators to reduce the noise coming from the tour boat public address

system so that intrusion on the natural quiet would be minimized.

The national lakeshore would continue to be managed for the perpetuation and protection of the natural environment and the preservation of cultural features while making them available for appropriate public use. Many significant cultural resources would be preserved, upgraded, and/or adaptively used, and nonsignificant cultural resources would be adaptively used or left alone.

Grand Sable Dunes would continue to be managed as a research natural area.

Visitor use limits generally would not be imposed in the orientation/history, casual recreation, or mixed use prescriptions unless dictated by facility design capacities or to protect resources. Current backcountry use management policies would be continued, and additional visitor use limits could be imposed to achieve desired resource or social conditions in primitive and pristine areas. (See Alternative C map.)

Locally promulgated zoning would continue as the basic management tool in the inland buffer zone.

National lakeshore managers would continue to follow the special mandates and service-wide mandates and policies described earlier in the "Guidance for the Planning Effort" section of this document.

### MANAGEMENT PRESCRIPTIONS AND RELATED ACTIONS

The greatest proportion of the national lakeshore (48%) would be managed under the mixed-use prescription. The casual recreation prescription would cover the next greatest portion of the national lakeshore (25%),

including the surface waters of Lake Superior to a distance of 0.25 mile off-shore (within the national lakeshore boundary). About 13 % of the national lakeshore (Beaver Basin area) would be managed as primitive, the developed management prescription would cover about 10%, and about 3% (Grand Sable Dunes area) would be managed as pristine in alternative C. The orientation/ history prescription would cover about 1%. (See table 3 at the end of the description of the alternatives for a comparison of the balance of management prescriptions.)

There would be about 19 miles of the paved road prescription and about 16 miles of the improved gravel prescription. No roads would be managed as primitive in alternative C.

The remainder of this section describes how different areas of the national lakeshore would be managed and what actions the National Park Service would take under alternative C.

These actions are those believed most likely to take place during the next 15 years in the national lakeshore, given alternative C's concept, management prescriptions, the conditions that already exist in the lakeshore, and the lakeshore's environmental constraints. Under this alternative, new facilities would be constructed in already disturbed areas where possible. Disturbance to sensitive areas such as threatened and endangered species habitat and archeological sites would also be avoided or mitigated whenever possible.

### **Orientation/History Prescription**

The NPS/USFS information center at Munising would be managed according to the orientation/ history prescription. This would require no change in management.

Munising Falls, Sand Point, and the Schoolcraft furnace and kilns would also be

managed as orientation/history. The furnace and kilns would continue to be protected.

Once the lakeshore headquarters function was relocated away from Sand Point and the Munising Range Light Station to the new Munising administration facility adjacent to the Munising maintenance facility, a portion of Sand Point would be managed to provide visitors with opportunities to learn about Coast Guard history. (The Munising Range Light Station would be in the developed prescription while being used for administrative purposes.) The Sand Point Coast Guard station and boat house would be rehabilitated/preserved to protect the architectural values associated with their period of significance (1933-46, with an emphasis on the 1940s era). The cultural landscape would be restored to reflect the ambiance and most significant elements of this period in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). The site would also be actively interpreted. The first floor at the Coast Guard station would be restored to the 1940s Coast Guard era, and the boat house would be interpreted (with a 1940s focus).

When the Munising Range Light Station is no longer needed for administrative purposes, the site would be interpreted as a component of the national lakeshore's preservation and interpretation of the Lake Superior maritime history and the U.S. Coast Guard involvement in the region. It is the national lakeshore's intention to manage and maintain this property as a historic site. The station would be rehabilitated, preserved, and adaptively used for temporary staff offices until the new administration facility is completed on County Road H-58. (The U.S. Coast Guard would continue to maintain the operating aids to navigation [the front and rear range lights] that comprise two of the six structures on the

Alternative C

map

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property.) The cultural landscape would be restored to reflect the ambiance and significant elements of the period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). Interpretation of the site would be via onsite wayside exhibits.

The Miners Castle area provides easy access to a popular geologic feature and to the Lake Superior shoreline. This area would be managed as orientation/history in alternative C. Opportunities for visitors to become oriented to the national lakeshore and learn about lakeshore resources would be emphasized, so a small visitor orientation/interpretation building would be built (or existing buildings would be expanded) at the Miners Castle area to house this function.

The Au Sable Light Station area would be managed as orientation/history. Visitors would be able to easily get to the light station via a trail, and light station tour and day hiking opportunities would be available. The exteriors of the small ancillary structures would be rehabilitated, and the interiors would be renovated for historic interpretation and adaptive use. Preservation treatment that meets the *Secretary of the Interior's Standards for the Treatment of Historic Properties* would also be done on the smaller structures to protect the station's architectural and interpretive values. The cultural landscape would be restored to reflect the early 1900s time period based on the approved 1998 "Cultural Landscape Report." Restrooms and utilities would also be added without detracting from the historic scene.

The Abrahamson Farm barn, near the Grand Sable visitor center, would be preserved/rehabilitated, and the cultural landscape would be restored to a facsimile of its period of significance in line with recommendations

from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). For example, some farm fields might be cleared, some orchards might be managed, and certain fields might be leased for growing hay.

The Grand Marais Coast Guard Station, also managed as orientation/history, would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its 1940s period of significance, in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*), and a site plan for improvements (comfort station, parking, and access for people with disabilities) would be developed, as management of adjacent land (parking lot, etc.) would be transferred from the Coast Guard and Army Corps of Engineers to the National Park Service in this alternative. All management actions would be consistent with re-creation of the 1940s historic scene. Because the administrative offices and maintenance function would move to the new east-end administration/maintenance facility, there would likely be increased space for the Maritime Museum.

The Grand Marais Harbor of Refuge quarters would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*).

The Grand Sable visitor center and the Grand Marais Maritime Museum would be managed

as orientation/history to provide opportunities for comprehensive interpretation of agricultural and maritime history. The desired conditions would be that visitors are well oriented as they enter the lakeshore from the east and are able to obtain any permits they need.

### Casual Recreation Prescription

The area between Munising Falls to the east end of Chapel Basin would be managed as casual recreation. In alternative C the Miners area (except Miners Castle) would be managed for casual recreation to allow development of a new drive-in campground (25-35 sites) and trails. Another exception would be that Miners Lake would be managed as nonmotorized.) The Mosquito River area would be in the casual recreation management prescription; it could undergo a substantial increase in use due to elimination of the Chapel backcountry campground (see below). The Mosquito Beach backcountry campground would be expanded if demand increased as expected.

At the Becker farm, the open-field characteristics of the historic farmstead would be preserved.

Chapel Basin would be managed as casual recreation to allow improvements associated with providing drive-in access to Chapel Falls and beach (see improved gravel road prescription). Accordingly, the Chapel backcountry campground would be eliminated and day use facilities (parking, toilets) would be provided.

Beaver Lakes would also be managed under the casual recreation prescription to maintain the rustic drive-in camping experience and current boating opportunities (10 horsepower limit).

Landowners in the Kingston Lake area would be encouraged to manage the lake and the adjacent state forest campground to be con-

sistent with the casual recreation prescription and to maintain the existing visitor opportunities at this popular state-managed recreation area.

The Twelvemile Beach and Hurricane River campgrounds would be managed as casual recreation. This would mean no change at the Twelvemile Beach campground. At each of these campgrounds enhancements would be made (comfort stations, water and electric service, etc.) to improve sanitation and visitor comfort. A detailed site plan for redesign of the Hurricane River campground/Au Sable Light Station area would be developed. Desired conditions for the redesigned area include better protection of the wet areas adjacent to the lower campground loop, improved vehicular circulation, and better separation of campground activities from day uses. The site plan should consider removing the lower campground loop and converting a portion of this area to day use parking to serve Au Sable Light Station visitors. A replacement campground loop could be constructed only if a suitable location could be found.

The Log Slide area would be managed as casual recreation, and easy access to this popular area would be maintained (no change from current management).

At the east end of the lakeshore, the area around Grand Sable Lake would be managed as casual recreation to increase recreational opportunities and improve access. At Grand Sable Lake boat-in campsites would be added. Boating on Grand Sable Lake would continue (including motorboats with 50 horsepower motors or less).

The 0.25-mile-wide strip of Lake Superior within the national lakeshore would be in the casual recreation management prescription, so current motorized and nonmotorized boating activities and access from Lake Superior would continue. Recommendations would be made to tour boat operators to

reduce the noise coming from the tour boat public address system.

### **Mixed Use Prescription**

The mixed use management prescription in alternative C would be in most of the inland buffer zone and within the shoreline zone in an area just east of Beaver Basin (see Alternative C map). Mixed use areas would be managed to continue opportunities for extractive and recreational activities. The National Park Service would seek to continue cooperative management or zoning arrangements with other landholders in these areas.

An overlook in the Sevenmile Creek area would be added contingent on the state donating an easement across about 240 acres of their land and the acquisition of an easement on about 10 acres of ForestLand Group, Limited Liability Corporation land. (The national lakeshore's establishing legislation expressly states that property owned by the state may be acquired only by donation.) The overlook would be on the ridge and the parking lot would be placed back from the rim edge to mitigate noise, and it would be screened by vegetation; there would be limited vista clearing and a short walk to the overlook. All improvements would depend on meeting national environmental compliance and resource protection laws. This overlook would provide one of the most spectacular vistas in the national lakeshore, overlooking Sevenmile Creek, Beaver Basin, Grand Portal, and Lake Superior.

### **Pristine Prescription**

Grand Sable Dunes would be managed under the pristine prescription, consistent with its status as a research natural area. Natural conditions and special resources associated with the dune system would be maintained; there would be no change in management.

### **Primitive Prescription**

Beaver Basin would be managed under the primitive prescription to maintain opportunities for a relatively remote backcountry experience. An old garage structure would be removed, a gravel pit would be reclaimed, and two track roads in the area would be allowed to revert to more natural conditions. Visitor use would continue to be dispersed throughout the basin.

### **Developed Prescription**

The developed management prescription would be for areas that are primarily administrative or residential. The area around the national lakeshore maintenance facility off H-58, near Munising, would be managed as developed. The lakeshore headquarters function would be relocated from Sand Point and the Munising Range Light Station to this area. (The building used for headquarters is too small to accommodate current staff and is substandard with respect to utilities and accessibility.) A new administration building (about 20,000 square feet) would include curatorial space that is consistent with NPS standards and would be built on land that was prepared for the new building during construction of the Munising maintenance facility.

Landowners of the areas along Carmody, Monette, and Chapel Roads (see Alternative C map) would be encouraged to manage these lands consistent with the intent of the developed prescription to allow private residential use to continue.

Landowners of areas in the inland buffer zone near Miners Castle Road, around Shoe Lakes, and around Kingston Lake (except the campground), and south of the Log Slide area along County Road H-58 (see map) would be encouraged to manage these lands consistent with the intent of the developed prescription to allow for future private residential use and

development. (This is consistent with current county and township zoning.)

East-end administrative and maintenance functions would be consolidated in a new facility (about 6,700 square feet) near Grand Marais, also managed in the developed prescription. (The existing maintenance facility would be removed; it consists of a few converted farm buildings and is substandard and too small).

### Road Prescriptions

The county would be encouraged to pave the stretch of County Road H-58 from Munising to Grand Marais. (Sections between Little Beaver Lake road and Grand Sable Lake overlook (about 60% of H-58) are currently gravel or sand.) Paving would provide safe, easy access along the national lakeshore's principal transportation route.

To provide easier access to major national lakeshore features there would be more roads in the paved road prescription than in any other alternative: Sand Point, Carmody (except the east-west portion), Miners Castle, Miners Falls, Miners Beach, Monette, and Chapel Roads, a portion of Miners Beach Road, Twelvemile Beach and Hurricane River access and campground roads, and Log Slide and Grand Sable Lake roads. The following roads would require paving (the others are paved already): Miners Falls, Miners Beach, Chapel (to south lakeshore boundary), Log Slide, and Grand Sable Lake.

Easier access to Chapel Falls, Chapel Beach, and Chapel Rock would be provided by upgrading old roads now managed as hiking trails to improved gravel roads (vehicular access would be permitted). The Little Beaver Lake road would also be managed as improved gravel (no change from existing conditions). The rough Beaver Basin overlook road would be upgraded to improved gravel for easier access to this scenic viewpoint, consistent with the intent of this alternative. A

new road to Sevenmile Creek overlook from County Road H-58 would be constructed and managed as improved gravel. This road would create vehicular access to scenic views of the Sevenmile Creek area, Grand Portal, Lake Superior, and Beaver Lake, a desired condition for alternative C.

There would be no roads in the primitive road prescription in this alternative.

### WILDERNESS

There would be no proposal for designation of wilderness at Pictured Rocks National Lakeshore.

### COSTS

Costs are given for comparison to other alternatives only and are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a mid-point in a possible range of costs. The costs developed are total life-cycle costs, which are inclusive of all initial costs (new development including transportation infrastructure costs, rehabilitation, interpretive media, etc.), replacement costs, and recurring annual costs such as national lakeshore operations.

All of these costs are projected out for 25 years, and shown as the worth in today's dollars. For a more detail explanation of life cycle costs, please refer to the "Development of GMP Cost Estimates" section earlier in this chapter. The initial capital cost for alternative C is \$48,066,000. The recurring or replacement costs would be \$1,188,000. The recurring annual costs would be \$24,581,000. The total life-cycle cost for this alternative would be \$73,835,000.

Improving 20 miles of H-58 to a paved surface would cost an additional \$18.5 million. These costs are the responsibility of Alger County and would not be incurred by the National Park Service.

## ALTERNATIVE D

Alternative D was used as the basis for the preferred alternative and was therefore eliminated from further analysis.

## ALTERNATIVE E

### CONCEPT AND GENERAL MANAGEMENT STRATEGIES

This concept responds to public comments that encouraged the National Park Service to commit much of the national lakeshore to wilderness. It also responds to comments that the national lakeshore should be available to all user groups, not just a select few. Therefore, the national lakeshore would continue to provide a diversity of use and visitor experience opportunities separated geographically – the remote and primitive uses would be found in the central portion of the national lakeshore (proposed wilderness), while the eastern and western portions would be more accessible. Some cultural and natural features at the east and west portions of the lakeshore would be easier to get to and have more facilities and amenities than now.

In alternative E much of the middle third of the national lakeshore would be proposed for wilderness designation. Beaver Basin, Chapel Basin, and adjacent areas would be included in the wilderness proposal, maximizing opportunities for nonmotorized recreation such as hiking and backcountry camping in a relatively remote, quiet, natural area in the central portion of the national lakeshore. Within the middle (proposed wilderness) portion of the lakeshore, structures would be removed, and roads would be converted to trails or closed and allowed to revert to natural vegetation.

To accommodate possible increased use in the nonwilderness portion of the national lakeshore, certain roads would be upgraded (the county would be encouraged to upgrade H-58), and a campground would be added in the Miners area. Operational facilities would be consolidated near Munising and Grand Marais for efficiency. Concession structures would not be added to the lakeshore, and local communities would be encouraged to

provide visitor services. (See Alternative E map.)

The national lakeshore would continue to be managed for the perpetuation and protection of the natural environment and the preservation of cultural features while making them available for appropriate public use. Several significant cultural resources would be preserved, upgraded, and/or adaptively used, and nonsignificant cultural resources would be adaptively used or left alone.

Grand Sable Dunes would continue to be managed as a research natural area.

Visitor use limits generally would not be imposed in the orientation/history, casual recreation, or mixed use prescriptions, unless dictated by facility design capacities or to protect resources. Existing backcountry use management policies would be continued, and additional visitor use limits could be imposed to achieve desired resource or social conditions in primitive and pristine areas.

Locally promulgated zoning would continue as the basic management tool in the inland buffer zone.

National lakeshore managers would continue to follow the special mandates and service-wide mandates and policies described earlier in the "Guidance for the Planning Effort" section of this document.

### MANAGEMENT PRESCRIPTIONS AND RELATED ACTIONS

The greatest proportion of the national lakeshore (about 45%) would be managed under the mixed use prescription. About 39% of the national lakeshore would be managed as primitive, including the central Lake Superior portion of the national lakeshore, and about

Alternative E

map

foldout

back of map

11% of the national lakeshore would be managed as casual recreation. About 3% of the national lakeshore would be managed as the most restrictive pristine prescription. The orientation/ history prescription would cover about 1%, and the developed management prescription would cover about 1%. (See table 3 at the end of the description of the alternatives for a comparison of the balance of management prescriptions.)

There would be about 9 miles of the paved road prescription, about 13 miles of the improved gravel prescription, and no miles managed as the primitive prescription.

The remainder of this discussion describes how different areas of the national lakeshore would be managed and what actions the National Park Service would take under alternative E. These actions are those believed most likely to take place during the next 15 years in the national lakeshore, given alternative E's concept, management prescriptions, the conditions that already exist in the lakeshore, and the lakeshore's environmental constraints. Under this alternative, new facilities would be constructed in already disturbed areas where possible.

### Orientation/History Prescription

The NPS/USFS information center at Munising would be managed according to the orientation/ history prescription (no change in management).

Munising Falls, Sand Point, and the Schoolcraft furnace and kilns would also be managed as orientation/history. The furnace and kilns would continue to be protected.

Once the lakeshore headquarters function was relocated away from Sand Point and the Munising Range Light Station to the Munising administration facility adjacent to the Munising maintenance facility, a portion of Sand Point would be managed to provide

visitors with opportunities to learn about Coast Guard history. (The Munising Range Light Station would be in the developed prescription while being used for administrative purposes.) The Sand Point Coast Guard station and boat house would be rehabilitated/preserved to protect the architectural values associated with their period of significance (1933-46, with an emphasis on the 1940s era). The cultural landscape would be restored to reflect the ambiance and most significant elements of this period in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). The site would also be actively interpreted. The first floor of the Coast Guard station would be restored to the 1940s Coast Guard era, and the boat house would be interpreted (with a 1940s focus).

When the Munising Range Light Station is no longer needed for administrative purposes, the site would be interpreted as a component of the national lakeshore's preservation and interpretation of the Lake Superior maritime history and the U.S. Coast Guard involvement in the region. It is the national lakeshore's intention to manage and maintain this property as a historic site. The station would be rehabilitated, preserved, and adaptively used for temporary staff offices until the new administration facility is completed on County Road H-58. (The U.S. Coast Guard would continue to maintain the operating aids to navigation [the front and rear range lights] that comprise two of the six structures on the property.) The cultural landscape would be restored to reflect the ambiance and significant elements of the period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of*

*Cultural Landscapes*). Interpretation of the site would be via onsite wayside exhibits.

The Miners Castle area provides easy access to a popular geologic feature and to the Lake Superior shoreline. This area would be managed as orientation/history in alternative E. Opportunities for visitors to become oriented to the national lakeshore and learn about lakeshore resources would be emphasized, so a small visitor orientation/interpretation building would be built (or existing buildings would be expanded) at Miners Castle.

The Au Sable Light Station area would be managed as orientation/history. Visitors would be able to easily get to the light station via a trail, and light station tour and day hiking opportunities would be available. The exteriors of the small ancillary structures would be rehabilitated, and the interiors would be renovated for historic interpretation and adaptive use. Preservation treatment that meets the *Secretary of the Interior's Standards for the Treatment of Historic Properties* would also be done on the smaller structures to protect the station's architectural and interpretive values. The cultural landscape would be restored to reflect the early 1900s time period based on the approved 1998 "Cultural Landscape Report." Restrooms and utilities would also be added without detracting from the historic scene.

The Coast Guard Station in Grand Marais, also managed as orientation/ history, would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its 1940s period of significance, in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*), and a site plan for day use improvements (comfort station, parking, and access for people with

disabilities) would be developed. Management of adjacent land (parking lot, etc.) would be transferred from the Coast Guard and Army Corps of Engineers to the National Park Service. All management actions would be consistent with re-creation of the 1940s historic scene. Because the administrative offices and maintenance function would move to the new east-end administration and maintenance facility, there would likely be increased space for the Maritime Museum.

The Grand Marais Harbor of Refuge quarters would be preserved, rehabilitated, and adaptively used. The cultural landscape would be restored to a facsimile of its period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*).

The Grand Sable visitor center and the Grand Marais Maritime Museum would be managed as orientation/history to provide opportunities for comprehensive interpretation of agricultural and maritime history. The desired conditions would be that visitors are well oriented as they enter the lakeshore from the east and are able to obtain any permits they need.

### **Casual Recreation Prescription**

The area between Munising Falls and Miners Beach would be managed as casual recreation.

At the Becker farm, the open-field characteristics of the historic farmstead would be preserved.

In alternative E the Miners area (except Miners Castle) would be managed for casual recreation to allow development (e.g., a new drive-in campground [25-35 sites] and trails similar in character and size to the Hurricane

River and Twelvemile Beach campgrounds). An exception would be that Miners Lake would be managed as nonmotorized.

Landowners in the Kingston Lake area would be encouraged to continue to manage these lands and waters consistent with the intent of the casual recreation prescription (no changes in management would be anticipated).

The Twelvemile Beach and Hurricane River campground areas would also be managed as casual recreation. This would mean no change at the Twelvemile Beach campground. A detailed site plan for redesign of the Hurricane River campground area would be developed. Desired conditions for the redesigned area include better protection of the wet areas adjacent to the lower campground loop, improved vehicular circulation, and better separation of campground activities from day uses. The site plan should consider removing the lower campground loop and converting a portion of this area to day use parking to serve Au Sable Light Station visitors. A replacement campground loop could be constructed only if a suitable location could be found.

The Log Slide area would be managed as casual recreation (no changes would be anticipated).

The Abrahamson Farm barn, near the Grand Sable visitor center, would be rehabilitated, and the cultural landscape would be restored to a facsimile of its period of significance in line with recommendations from a future cultural landscape report or other appropriate research and treatment plan (and in compliance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*). For example, some farm fields might be cleared, some orchards might be managed, and certain fields might be leased for growing hay.

Part of the far east end of the national lakeshore, including Grand Sable Lake, would be managed as casual recreation. In this alternative access to east end facilities and attractions would be improved. Boating on Grand Sable Lake would continue (including motorboats with 50 hp or less).

The 0.25-mile-wide strip of Lake Superior within the national lakeshore stretching from the west lakeshore boundary to the east end of Miners Beach would be in the casual recreation management prescription. The 0.25-mile-wide Lake Superior strip stretching from the mouth of Sevenmile Creek to the east boundary near Grand Marais would also be managed as casual recreation. Motorized and nonmotorized boating and access from Lake Superior would be allowed to continue in these areas.

### **Mixed Use Prescription**

The mixed use management prescription in alternative E would generally be applied to parts of the inland buffer zone that are not within the proposed wilderness. These mixed use areas would be managed to continue opportunities for extractive and recreational activities as authorized in the legislation that established the national lakeshore. The National Park Service would seek to continue cooperative management and zoning in these areas. Management of these areas would not be significantly different than current management.

### **Pristine Prescription**

Grand Sable Dunes would be managed under the pristine prescription, which is consistent with its status as a research natural area. Natural conditions and special resources associated with the dune system would be maintained, but this would not constitute a change in management.

### Primitive Prescription

Most of the shoreline zone and part of the inland buffer zone in the middle of the national lakeshore would be managed as primitive to provide maximum opportunities for remote, wild experiences and maintain natural conditions. Primitive trails and backcountry campsites would be allowable uses. Included in the primitive prescription, from west to east, would be the area between Miners Beach and Chapel Basin, Chapel Basin, the Spray Creek area, Beaver Basin, and the rim area to the east of Beaver Basin (see Alternative E map). Roads in these areas (mostly two-tracks) would be allowed to revert to natural conditions, and motorized boats would no longer be allowed on Beaver Lakes.

To bring the area into conformance with the primitive management prescription and proposed wilderness, the Little Beaver Lake and the Beaver Basin overlook roads would be closed and converted to hiking trails, the trail-head parking lots at the ends of those roads would be closed, and most other man-made structures (the water system, garage, and amphitheater, for example) would be removed.

From the east end of Miners Beach to the mouth of Sevenmile Creek, the 0.25-mile-wide strip of Lake Superior within the lakeshore would be managed under the primitive prescription. Motorized boats including tour boats would no longer be permitted to use these waters. The rationale for managing this area as primitive is to support wilderness values and opportunities for wilderness recreation on wilderness lands in adjacent areas. It would also provide a quieter section of shoreline for nonmotorized boat users.

At the east end of the national lakeshore, an area west of Sullivan Creek to Grand Sable Lake and around the lake would be managed as primitive (no change in management would be required).

### Developed Prescription

The existing lakeshore maintenance facility off H-58, near Munising, would be managed under the developed prescription. The lakeshore headquarters function would be relocated from Sand Point and the Munising Range Light Station to this area. A new administration building (about 20,000 square feet), would include curatorial space that is consistent with NPS standards and would be built on land that was already prepared for the new building during construction of the Munising maintenance facility.

Landowners of areas along Carmody, Monette, and Chapel Roads would be encouraged to continue to manage these lands consistent with the intent of the developed prescription to allow private residential use to continue (no change from current conditions).

There would be another developed area at the east end of the national lakeshore. East-end administrative and maintenance functions would be consolidated in a new facility (about 6,700 square feet) near Grand Marais. (The existing east-end maintenance area would be removed; it consists of a few converted farm buildings, and is substandard and too small).

### Road Prescriptions

The county would be encouraged to pave County Road H-58 from Munising to Kingston Corner and from Log Slide to Grand Marais and the Grand Sable Lake boat ramp access road to provide easy, scenic access on these road stretches. Thus, parts that are gravel or sand should be paved to bring them into conformance with the paved road management prescription.

Sand Point, Carmody (except the east-west portion), Miners Castle, Monette, and Grand Sable Lake Roads, a portion of Miners Beach Road, and Log Slide access road would also be

managed under the paved road prescription to provide easy access to primary national lakeshore features or to private residential areas. This would require that Grand Sable Lake and Log Slide roads be paved (the others are paved already). The developed road prescription for Grand Sable Lake would include the boat ramp at the end of the road.

The county would also be encouraged to make County Road H-58 from Kingston Corner to the Log Slide access road an improved gravel road to provide relatively easy access to primary national lakeshore features on the east end of the national lakeshore. This would involve upgrading rough gravel or sand portions to improved gravel.

Other roads managed under the improved gravel road prescription would include Miners Falls road, Miners Beach road, Chapel Road, Twelvemile Beach and Hurricane River campground and access roads. The intent in this alternative is to provide relatively easy access to primary national lakeshore features in these areas. Chapel Road is the only road requiring improvements to conform to the improved gravel road prescription.

There would be no roads in the primitive management prescription in alternative E.

## WILDERNESS

The National Park Service would propose 18,063 acres for wilderness designation under alternative E (see Alternative E map, wilderness boundary). This is equal to about 25% of the national lakeshore, as compared to 18% in the preferred alternative. The area proposed for wilderness includes Beaver

Basin, Chapel Basin, and an area between Beaver and Chapel Basins.

Areas proposed for wilderness would be managed under the primitive management prescription. The primitive management prescription is consistent with managing to preserve wilderness characteristics of the area.

## COSTS

Costs are given for comparison to other alternatives only and are not to be used for budgeting purposes. Although the numbers appear to be absolutes, they represent a mid-point in a possible range of costs. The costs developed are total life-cycle costs, which are inclusive of all initial costs (new development including transportation infrastructure costs, rehabilitation, interpretive media, etc.), replacement costs, and recurring annual costs such as national lakeshore operations.

All of these costs are projected out for 25 years, and shown as the worth in today's dollars. For a more detail explanation of life cycle costs, please refer to the "Development of GMP CostEstimates" section earlier in this chapter. The initial capital cost for alternative E is \$10,762,000. The recurring or replacement costs would be \$820,000. The recurring annual costs would be \$25,664,000. The total life-cycle cost for this alternative would be \$37,247,000.

Improving 16.6 miles of H-58 to a gravel surface would cost an additional \$8.5 million. The National Park Service would not incur these costs.

## MITIGATION MEASURES COMMON TO ALL ALTERNATIVES

In the legislation that created it, Congress charged the National Park Service with managing the lands under its stewardship “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (NPS Organic Act, 16 USC 1). As a result, the National Park Service routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of national park system (national lakeshore) resources.

To ensure that implementation of the alternatives protects unimpaired natural and cultural resources and the quality of the visitor experience; a consistent set of mitigation measures would be applied to actions proposed in this plan. The National Park Service would prepare appropriate environmental review (i.e., those required by the National Environmental Policy Act, National Historic Preservation Act, and other relevant legislation) for these future actions. As part of the environmental review, the National Park Service would avoid, minimize, and mitigate adverse impacts when practicable.

### SUSTAINABLE DESIGN AND AESTHETICS

Projects should avoid or minimize adverse impacts on natural and cultural resources. Development projects (e.g., buildings, facilities, utilities, roads, bridges, trails, etc.) or reconstruction projects (e.g., road reconstruction, building rehabilitation, utility upgrade, etc.) should be designed to work in harmony with the surroundings, particularly in historic districts. Projects should reduce, minimize, or eliminate air and water nonpoint-source pollution. Projects should be sustainable whenever practicable, by recycling and reusing materials, by minimizing materials, by minimizing energy consumption during the project, and by minimizing energy

consumption throughout the lifespan of the project.

### MAINTAINING ECOLOGICAL INTEGRITY

National lakeshore managers will initiate a natural resource management project called Maintaining Ecological Integrity, which will develop quantifiable levels of intactness of important natural resource parameters that represent ecosystems in and adjacent to the national lakeshore. These levels will be considered minimum values necessary to ensure a naturally functioning ecosystem. The intent is to ensure overall integrity of resources while planning and implementing projects related to visitor services and managing visitor experience. Therefore, information on spatial and temporal distribution of visitors will be required to assess their effects on the ecosystem. This project will also address more difficult issues, including habitat fragmentation and cumulative effects. This project differs from long-term ecological monitoring in that cause-and-effect relationships are critical to determine program effectiveness. This project will continue indefinitely and will require more staff time than is currently available. Resulting project data may lead to limitations on visitor activities, densities, or other controls. The project goals are as follows:

- develop minimum standards for ecological integrity in the national lakeshore
- increase quality and utility of environmental compliance process
- provide guidance for understanding effects of various management alternatives and management decisions based on scientifically credible data

## **BEST MANAGEMENT PRACTICES DURING CONSTRUCTION**

The following best management practices would be implemented, as appropriate, before, during, and/or after specific construction (for the purposes of this discussion, construction includes major repair and/or rehabilitation, demolition, deconstruction, reconstruction, restoration, etc.). Specific tasks would include, but are not limited to, the following:

- Implement a compliance-monitoring program in order to stay within the parameters of National Environmental Policy Act and National Historic Preservation Act compliance documents, U.S. Army Corps of Engineers Section 404 permits, etc. The compliance-monitoring program would oversee these mitigation measures and would include reporting protocols.
- Implement a natural resource protection program. Standard measures could include construction scheduling, biological monitoring, erosion and sediment control, the use of fencing or other means to protect sensitive resources adjacent to construction, the removal of all food-related items or rubbish, topsoil salvage, and revegetation. This could include specific construction monitoring by resource specialists as well as treatment and reporting procedures.
- Implement a cultural resource protection program. Standard measures could include the salvage of historic building materials; archeological monitoring during ground disturbance; the use of fencing or other means to protect sensitive resources adjacent to construction and the preparation of a discovery plan to handle unanticipated exposure of buried human remains. This could include specific construction monitoring by resource specialists and culturally associated Indian people, as well as treatment and reporting procedures.
- Implement a traffic control plan, as warranted. Standard measures include strategies to maintain safe and efficient traffic flow during the construction period.
- Implement a dust abatement program. Standard dust abatement measures could include the following elements: water or otherwise stabilize soils, cover haul trucks, employ speed limits on unpaved roads, minimize vegetation clearing, and revegetate after construction.
- Implement standard noise abatement measures during construction. Standard noise abatement measures could include the following elements: a schedule that minimizes impacts on adjacent noise-sensitive uses, the use of the best available noise control techniques wherever feasible, the use of hydraulically or electrically powered impact tools when feasible, and the location of stationary noise sources as far from sensitive uses as possible.
- Implement a noxious weed abatement program. Standard measures could include the following elements: ensure construction-related equipment arrives on-site free of mud or feed-bearing material, certify all seeds and straw material as weed-free, identify areas of noxious weeds pre-construction, treat noxious weeds or noxious weed topsoil before construction (e.g., topsoil segregation, storage, herbicide treatment), and revegetate with appropriate native species.
- Implement a spill prevention and pollution control program for hazardous materials. Standard measures could include hazardous materials storage and handling procedures; spill containment, cleanup, and reporting procedures; and limitation of refueling and other hazardous activities to upland/ nonsensitive sites.
- Implement measures to reduce adverse effects of construction on visitor safety and experience.
- Implement a notification program. Standard measures could include notification of sensitive receptors, utilities, and

- emergency response units before construction activities.
- Implement an interpretation and education program. Continue directional signs and education programs to promote understanding among national lakeshore/park visitors.
- Use silt fences, sedimentation basins, etc. in construction areas to reduce erosion, surface scouring, and discharge to water bodies.
- Develop revegetation plans for the disturbed area and require the use of native species. Revegetation plans should specify seed/plant source, seed/plant mixes, soil preparation, etc. Salvage vegetation should be used to the extent possible.
- Delineate wetlands and apply protection measures during construction. Wetlands would be delineated by qualified NPS staff or certified wetland specialists and clearly marked before construction work. Construction activities should be performed in a cautious manner to prevent damage caused by equipment, erosion, siltation, etc.

## RESOURCE-SPECIFIC MEASURES

### Species of Concern

Mitigation actions would occur during normal park operations as well as prior to, during, and after construction to minimize immediate and long-term impacts to rare, threatened, and endangered species. These actions would vary by specific project and area of the national lakeshore affected. Many of the measures listed above for vegetation and wildlife would also benefit rare, threatened, and endangered species by helping to preserve habitat. Mitigation actions specific to rare, threatened, and endangered species would include the following:

- Conduct surveys for rare, threatened, and endangered species as warranted.

- Site and design facilities/actions to avoid adverse effects to rare, threatened, and endangered species. If avoidance is infeasible, minimize and compensate adverse effects on rare, threatened, and endangered species as appropriate and in consultation with the appropriate resource agencies.
- Develop and implement restoration and/or monitoring plans as warranted. Plans should include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.
- Implement measures to reduce adverse effects of non-native plants and wildlife on rare, threatened, and endangered species.

### Noise

Mitigation measures would be applied to protect the natural sounds in the national lakeshore. Specific mitigation measures include:

- Implement standard noise abatement measures during park operations. Standard noise abatement measures could include the following elements: a schedule that minimizes impacts to adjacent noise-sensitive uses, use of the best available noise control techniques wherever feasible, use of hydraulically or electrically powered impact tools when feasible, and location of stationary noise sources as far from sensitive uses as possible.
- Site and design facilities to minimize objectionable noise.
- Work with Pictured Rocks Cruises to find ways to minimize the noise that carries inland from the public address system on tour boats.
- Encourage users of snowmobiles and personal watercraft to use the new quieter vehicles currently being produced.
- Explore options to reduce the sounds of logging activities in the inland buffer zone.

## CULTURAL RESOURCES

The National Park Service would preserve and protect, to the greatest extent possible, resources that reflect human occupation of the Pictured Rocks area. Specific mitigation measures include the following:

- Subject projects to site-specific planning and compliance. Efforts would be made to avoid adverse impacts through use of the *Secretary of the Interior's Standards for Archeology and Historic Preservation*, and by using screening and/or sensitive design that would be compatible with historic resources.
- Conduct archeological site monitoring and routine protection. Conduct data recovery excavations at archeological sites threatened with destruction, where protection or site avoidance during design and construction is infeasible. Should archeological resources be discovered, stop work in that location until the resources were properly recorded by the National Park Service and evaluated under the eligibility criteria of the National Register of Historic Places. If, in consultation with the Michigan state historic preservation officer, the resources were determined eligible, implement appropriate measures either to avoid further resource impacts or to mitigate the loss or disturbance of the resources.
- Avoid or mitigate impacts on ethnographic resources. Mitigation could include identification of and assistance in accessing alternative resource gathering areas, continuing to provide access to traditional use and spiritual areas, and screening new development from traditional use areas.
- Restore and rehabilitate cultural landscape resources to the extent feasible. This could entail restoring important historic viewsheds through manual thinning, rehabilitating agricultural fields and orchards, removing noncontributing and incompatible structures, and

incorporating new additions using compatible design.

- Continue and formalize ongoing consultations with culturally associated American Indian people. Protect sensitive traditional use areas to the extent feasible.
- Conduct additional background research, resource inventory, and national register evaluation where information about the location and significance of cultural resources is lacking. Incorporate the results of these efforts into site-specific planning and compliance documents.
- Mitigation measures include documentation according to standards of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HARE) as defined in the Re-engineering Proposal (October 1, 1997). The level of this documentation, which includes photography, archeological data recovery, and/or a narrative history, would depend on significance (national, state, or local) and individual attributes (an individually significant structure, individual elements of a cultural landscape, etc.). When demolition of a historic structure is proposed, architectural elements and objects may be salvaged for reuse in rehabilitating similar structures, or they may be added to the national lakeshore's museum collection. In addition, the historical alteration of the human environment and reasons for that alteration would be interpreted to national lakeshore visitors.

## SCENIC RESOURCES

Mitigation measures are designed to minimize visual intrusions. These include the following:

- Where appropriate, facilities such as boardwalks and fences could be used to route people away from sensitive natural resources, while still permitting access to important viewpoints.

- Facilities should be designed, sited, and constructed to avoid or minimize adverse effects on natural communities and visual intrusion into the natural landscape.
- Provide vegetative screening, where applicable.

## **SOCIOECONOMIC ENVIRONMENTS**

During the future planning and implementation of the approved management plan for Pictured Rocks National Lakeshore, the National Park Service would work with local communities and county governments to further identify potential impacts and mitigation measures that would best serve the interests and concerns of both the National Park Service and the local communities.

Partnerships would be pursued to improve the quality and diversity of community amenities and services.

## **VISITOR EXPERIENCE**

Conduct an accessibility study to understand barriers to national lakeshore programs and facilities. Based on this study, implement a strategy to provide the maximum level of accessibility.

Conduct periodic studies of visitor experience, needs, level of satisfaction, etc. Based on these studies, implement strategies to provide optimum levels of visitor satisfaction.

## FUTURE STUDIES NEEDED

After completion and approval of a general management plan for managing the national lakeshore, other more detailed studies and plans, including additional environmental compliance (National Environmental Policy Act, National Historic Preservation Act, and other relevant laws and policies), and public involvement, would be needed. Those additional studies include but are not limited to the following.

A visitor management study/plan for the lower Hurricane and Au Sable Light Station areas would be done. The purpose of this plan would be to facilitate visitation to the Au Sable Light Station, protect and reduce vehicular and developmental impacts on wetlands and riparian resources in and adjacent to the lower Hurricane River campground, separate overnight camping and day use in the lower campground via revised or restructured

facilities, and consider options for getting visitors to and from the light station, picnic areas, etc. This study should prescribe practical and environmentally sound methods for visitor use management at these related sites.

An air tour management plan and business plan need to be completed for the national lakeshore.

Historic structure reports and cultural landscape reports need to be completed for the following areas: Munising Range Light Station, Sand Point Coast Guard Station and boat house, Grand Marais Coast Guard Station, the Harbor of Refuge quarters, the Abrahamson barn and farm structures, and the Becker farm fields.

**TABLE 3: SUMMARY OF ALTERNATIVES**

This table summarizes the key differences among the alternatives for the management of Pictured Rocks National Lakeshore. In all areas the no-action alternative would continue current management practices. Differences in the other four alternatives are highlighted below.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Alternative Concept</b>	<ul style="list-style-type: none"> <li>Continue existing operations and visitor facilities concentrated at the west and east ends of the lakeshore.</li> <li>Continue to provide a diversity of visitor use facilities from backcountry to drive-in campsites; primitive trails to boardwalks; unpaved to paved roads; and self-directed interpretation to ranger-led programs.</li> <li>Continue to preserve the central portion in a primitive, relatively undisturbed state.</li> </ul>	<ul style="list-style-type: none"> <li>Expand opportunities for visitor use while preserving the central portion of the national lakeshore in a primitive, relatively undisturbed state (propose wilderness in Beaver Basin).</li> <li>Manage national lakeshore for the perpetuation and protection of the natural environment and the preservation of cultural features while making them available for appropriate public use.</li> <li>Provide additional and more convenient access to significant national lakeshore features on the west and east portions of the national lakeshore.</li> <li>Maintain the diversity of visitor opportunities in a way that would not further degrade resources.</li> <li>Improve the operational effectiveness of the national lakeshore.</li> </ul>	<ul style="list-style-type: none"> <li>Continue management as in the no-action alternative with some minor visitor facility improvements.</li> <li>Continue to provide a diversity of visitor use facilities and experience opportunities throughout the national lakeshore.</li> <li>Preserve the central portion of the national lakeshore in a relatively primitive, undisturbed state.</li> </ul>	<ul style="list-style-type: none"> <li>Make the national lakeshore an easier and more convenient place to visit while keeping much of the lakeshore in a natural state.</li> <li>Provide additional facilities and infrastructure to accommodate use and make it easier to get to primary features.</li> <li>Explore ways to accommodate additional recreational use and to continue to provide a diversity of uses and experience opportunities throughout the national lakeshore.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to provide a diversity of use and visitor experience opportunities – offer remote and primitive uses in the large proposed wilderness area of Chapel and Beaver Basins, and make eastern and western portions more accessible.</li> <li>Maximize opportunities for nonmotorized recreation (hiking and backcountry camping) in a relatively remote, quiet, natural area in the central portion of the national lakeshore.</li> <li>Improve ease of access to some cultural and natural features in the remainder of the national lakeshore.</li> </ul>
<b>Management Prescriptions</b>	The management prescriptions were developed as a result of this planning effort and therefore are not applied to the no-action alternative.	Note: Percentages are approximate			
pristine		3%	3%	3%	3%
primitive		30%	18%	13%	39%
casual recreation		9%	20%	25%	11%
mixed use		51%	48%	48%	45%
orientation/history		1%	1%	1%	1%
developed		6%	10%	10%	1%
paved road		10 miles	9 miles	19 miles	9 miles

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Management Prescriptions (cont.)</b>					
improved gravel road		20 miles	12 miles	16 miles	13 miles
primitive road		0 miles	3 miles	0 miles	0 miles
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>• Continue to manage for the protection of cultural features while making them available for appropriate public use.</li> <li>• Continue to preserve, upgrade, and/or adaptively use some significant cultural resources; continue to adaptively use or leave other cultural resources alone.</li> <li>• Continue to rehabilitate and renovate the main buildings at the Au Sable Light Station.</li> <li>• Continue to house museum collection in substandard facilities.</li> <li>• Continue to protect and interpret Schoolcraft Furnace and kilns.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to preserve, upgrade, and/or adaptively use several significant cultural resources; continue to adaptively use or leave alone other cultural resources.</li> <li>• Continue to protect and interpret Schoolcraft Furnace and kilns.</li> <li>• Rehabilitate and adaptively use the Munising Range Light Station and restore cultural landscape.</li> <li>• Rehabilitate, preserve, and adaptively use Sand Point Coast Guard Station and boat house and Grand Marais Coast Guard Station and restore cultural landscapes.</li> <li>• Rehabilitate and renovate ancillary structures at Au Sable Light Station and restore cultural landscape; add restrooms and utilities.</li> <li>• Rehabilitate/preserve the Abrahamson barn and Becker farm and restore cultural landscape of farms.</li> <li>• Rehabilitate and preserve Grand Marais Harbor of Refuge quarters and adaptively reuse; restore cultural landscape.</li> <li>• Include curatorial space in new administrative/head-quarters facility at Munising administration and maintenance facility.</li> </ul>	Same as preferred alternative.	Same as preferred alternative.	Same as the preferred alternative.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Natural Resources</b>	<ul style="list-style-type: none"> <li>Continue to manage natural resources for the perpetuation and protection of the natural environment while making them available for appropriate public use.</li> <li>Continue to manage Grand Sable Dunes as a research natural area.</li> </ul>	Same as no action plus Ensure long-term protection of the natural resource values in the Beaver Basin by proposing it for designation as wilderness.	Same as no action alternative.	Same as no action alternative.	Same as no action plus Ensure long-term protection of the natural resource values in the Chapel and Beaver Basins by proposing these areas for wilderness designation.
<b>Visitor Use Opportunities</b>					
<b>Concept</b>	Concentrate use around Munising Falls, Sand Point, the Miners area, and along the North Country National Scenic Trail in the west end and Hurricane River, Twelvemile Beach, Au Sable Light Station, Log Slide, Grand Sable Lake and Falls, and along the North Country National Scenic Trail in the east end.	Same as no-action alternative.	Same as no action alternative.	Same as no action alternative.	Same as no action alternative.
<b>Visitor Orientation/ Interpretation</b>	<ul style="list-style-type: none"> <li>Continue visitor orientation and information at NPS/ USFS visitor information center in Munising, Munising Falls, Miners Castle, Grand Sable visitor center, and Grand Marais Maritime Museum/ ranger station.</li> <li>Continue interpretation at the former Sand Point Coast Guard Station, Au Sable Light Station, and Grand Marais Maritime Museum.</li> </ul>	Same as no-action, plus . Offer interpretation at Munising Range Light Station, the former Sand Point Coast Guard Station (more actively than in the no-action alternative), Au Sable Light Station, Grand Marais Coast Guard Station, Grand Marais Harbor of Refuge quarters, and Grand Marais Maritime Museum.	Same as preferred alternative.	Same as preferred, plus Construct small visitor orientation/interpretation building (or expand existing buildings) at Miners Castle.	Same as alternative C.
<b>Activities and Access to Features</b>	<p>Continue dispersed visitor use in Beaver Basin.</p> <p>No new drive-in campground and trails in the Miners area.</p> <p>No new boat-in campsites at Grand Sable Lake.</p>	<p>Same as no action alternative.</p> <p>Construct new drive-in campground and trails in the Miners area.</p> <p>Construct boat-in campsites at Grand Sable Lake.</p>	<p>Same as no action alternative.</p> <p>Same as preferred alternative.</p> <p>Same as no action alternative.</p>	<p>Same as no action alternative.</p> <p>Same as preferred alternative.</p> <p>Same as preferred alternative.</p>	<p>Same as no action; close roads and Beaver Basin overlook.</p> <p>Same as preferred alternative.</p> <p>Same as no action alternative.</p>

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Activities and Access to Features (cont.)	No overlook at Sevenmile Creek.	Same as no action alternative.	Same as no action alternative.	Construct new overlook and improved gravel access road to Sevenmile Creek overlook (through donation of a 240-acre easement from the state and the acquisition of a 10-acre easement from ForestLand Group, Limited Liability Corporation ).	Same as no action alternative..
	No site plan for Hurricane River campground/Au Sable Light Station area.	Develop detailed site plan for Hurricane River campground/Au Sable Light Station area.	Same as preferred alternative.	Same as preferred alternative.	Same as preferred alternative.
	Keep current mix of gravel and paved access roads.	Pave/improve a few access roads to primary national lakeshore features.	Same as no action alternative..	Pave/improve many access roads to improve vehicular access to additional lakeshore areas, features, and significant cultural resources.	Pave/improve several access roads to primary national lakeshore features.
Visitor Use Limits	Continue boating on Grand Sable Lake (50 hp or less) and Lake Superior.  Keep roads in Beaver Basin open.  Continue to allow current water activities on Lake Superior.  Continue current use of all motors on Little Beaver and Beaver Lakes.	Same as no action alternative.  Close all vehicular roads in Beaver Basin except for Little Beaver Lake campground access road. Prohibit motorized boat access 0.25 mile into Lake Superior from Spray Falls to the mouth of Sevenmile Creek. Prohibit use of motors on Little Beaver and Beaver Lakes.	Same as no action alternative.  Keep roads in Beaver Basin open.  Allow current water activities on Lake Superior.  Allow current use of motors on Little Beaver and Beaver Lakes to continue.	Same as no action alternative.  Keep roads in Beaver Basin open.  Same as alternative A.  Allow current use of motors on Little Beaver and Beaver Lakes to continue.	Same as no action alternative.  Close roads in Beaver Basin, and convert to hiking trails.  Prohibit motorized boat access 0.25 mile into Lake Superior from east of Miner's Beach to the mouth of Sevenmile Creek. Same as preferred.
Tour Boats	Continue tours of pictured rocks.	Continue tours of pictured rocks with the recommendation that noise from the public address system be reduced so that intrusion on the natural quiet is minimized.	Same as preferred alternative.	Same as preferred alternative.	Same as preferred; also, boats would be required to be at least 0.25 mile from shore between Miners Beach and Chapel Beach.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
County Road H-58	Continue mix of paved and unpaved.	Recommend improving some portions of the road to a gravel surface to meet NPS needs (however paving H-58 would also be acceptable to the National Park Service).	Recommend paving H-58 from Munising to Grand Marais to provide easy access along the national lakeshore's principal transportation route.	Same as alternative A.	<ul style="list-style-type: none"> <li>• Recommend paving H-58 from Munising to Kingston Corner and Log Slide to Grand Marais to provide easy and scenic access in these areas.</li> <li>• Recommend making H-58 improved gravel between Kingston Corner and Log Slide.</li> </ul>
National Lakeshore Operations	<ul style="list-style-type: none"> <li>• Continue to divide administration between Grand Marais ranger station, and the Grand Sable visitor center.</li> <li>• Continue to base west-end maintenance at maintenance facility near Munising.</li> <li>• Continue administrative headquarters in the old Coast Guard station at Sand Point.</li> <li>• Continue to base east-end maintenance activities between the visitor center and Grand Marais.</li> <li>• Attempt to acquire outstanding mineral rights on federally owned lands.</li> <li>• Continue existing payment-in-lieu-of taxes on lands that have been previously acquired.</li> <li>• Seek transfer of about 7.5 acres at Coast Guard Point in Grand Marais from the Coast Guard and Army Corps of Engineers to consolidate ownership and improve public access.</li> </ul>	<p>Relocate national lakeshore headquarters function from Sand Point to new administrative building in Munising maintenance facility area.</p> <ul style="list-style-type: none"> <li>• Move staff at Munising Range Light Station to new administration/maintenance facility.</li> <li>• Consolidate east-end administrative and maintenance functions in new facility; remove existing Grand Marais maintenance facility.</li> <li>• Consider land acquisition, according to criteria, if lands became available.</li> </ul>	Same as preferred alternative.	Same as preferred alternative.	Same as preferred alternative..

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Wilderness</b>	Propose no wilderness.	Propose federal lands in Beaver Basin (except for Little Beaver Lake campground and access road) for wilderness designation – 12,843 acres (about 18% of national lakeshore).	Propose no wilderness.	Propose no wilderness.	Propose Beaver Basin and Chapel Basin for wilderness designation – 18,063 acres (about 25% of national lakeshore).
<b>Estimated Costs Over the 15-Year Life of the Plan (in 2000 dollars)</b>					
Capital costs	\$0	\$23,078,000	\$11,283,000	\$48,066,000	\$10,762,000
Recurring or replacement costs	\$20,170,000	\$1,154,000.	\$943,000	\$1,188,000.	\$820,000
Recurring annual costs	\$943,000	\$25,529,000.	\$24,623,000	\$24,581,000.	\$25,664,000
<b>Total Life Cycle Costs</b>	<b>\$21,113,000</b>	<b>\$49,761,000</b>	<b>\$36,850,000</b>	<b>\$73,835,000.</b>	<b>\$37,247,000</b>

**TABLE 4: SUMMARY OF ENVIRONMENTAL IMPACTS**

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Cultural Resources</b>					
Archeological Sites	No project or construction-related ground disturbance with the potential to impact known archeological resources would occur.	Protect sites identified during surveys of project areas to the extent possible, depending on staffing and funding levels. When possible, avoid the site; if avoidance was not possible, mitigate impacts by recovering site data. Overall impacts on sites that could not be avoided would be long-term, minor to moderate (depending on the data recovery potential of the site) adverse impacts.	Same as preferred alternative.	Same as preferred alternative.	Same as preferred alternative.
Historic Structures	Minor long-term beneficial impact on the Schoolcraft Furnace site, the Au Sable Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, the Munising Range Light Station, and the Abrahamson barn because preservation work and adaptive use would maintain the structures' values and ensure the maintenance and preservation of the buildings.	Long-term minor to moderate beneficial impacts on the Munising Range Light Station, Au Sable Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, and the Abrahamson farm because the structures would be rehabilitated and preserved and documented architectural values would be preserved.	Same as preferred alternative.	Same as preferred alternative.	Same as preferred alternative.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Cultural Landscapes	Long-term minor adverse impacts on cultural landscapes associated with Au Sable Light Station, Abrahamson and Becker Farms, Sand Point and Grand Marais Coast Guard Stations, and Grand Marais Munising Range Light Station, Harbor of Refuge quarters (preservation work and adaptive use would maintain the structures' values and ensure the maintenance and preservation of the buildings), as well as abandoned agricultural operations, cabin clearings, and abandoned roads.	Restoring the cultural landscapes at the Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson and Becker Farms would have long-term, moderate beneficial impacts on the cultural landscapes associated with these sites by preserving their documented values, removing noncontributing elements, and adding other elements reflective of a reasonable facsimile of the cultural landscape's period of significance.  Eventual loss of landscapes associated with farming or other agricultural activities – a minor long-term adverse impact.	Same as preferred alternative.	Same as preferred alternative.	Same as preferred alternative.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Ethnographic Resources	<p>No project or construction-related ground disturbance with the potential to impact known ethnographic resources.</p> <p>American Indians would continue to be occasionally disrupted during religious activities, a minor, short-term, recurring adverse impact.</p>	<p>No project- or construction-related ground disturbance with the potential to impact known ethnographic resources.</p> <p>American Indians desiring privacy for religious activities would be disrupted by the presence of other visitors and noise from visitor-related activities – a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional.</p>	Same as preferred alternative.	Same as preferred alternative.	<p>No project- or construction-related ground disturbance with the potential to impact known ethnographic resources.</p> <p>American Indians desiring privacy for religious activities would be disrupted by the presence of other visitors and noise from water-based visitor-related activities in the casual recreation prescription – a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional.</p>
Museum Collection	<p>Long-term minor adverse impact on some of the national lakeshore’s museum collection from continued substandard storage and display conditions. Long-term moderate adverse impacts on staff and researchers from limited access and lack of sufficient space to curate the collection.</p>	<p>Long-term major beneficial impacts on the preservation of and access to the national lakeshore’s museum collection because the collection would be housed in a new repository that would meet modern professional standards and would be more accessible to staff and researchers.</p>	Same as preferred alternative.	Same as preferred alternative.	Same as preferred alternative.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Natural Resources</b>					
Species of Concern	Continuing current management would perpetuate short- and long-term beneficial impacts for species of concern. Preserving Grand Sable Dunes as a research natural area would continue to provide a major long-term benefit for species of concern in that area. There would be no discernable adverse impacts on the bald eagle, pitcher's thistle, the gray wolf, or other species of concern expected. Species occurring north of the inland buffer zone elsewhere in the lakeshore would continue to benefit from federal (NPS) protection. Species on state lands are protected through review and management. Species on corporate and privately owned land require review by the Michigan Department of Natural Resources. Although these laws and policies do not guarantee protection, they are an added incentive for protecting these species.	Negligible long-term effects on the bald eagle, pitcher's thistle, gray wolf, or other species of concern. Species occurring within NPS-owned lands are managed to maintain or enhance beneficial conditions. Species inhabiting state lands are protected through review and management. Species on privately owned land are subject to review by the Michigan Department of Natural Resources to ensure protection. Although these laws and policies do not guarantee protection, they are an added incentive for protecting these species.	Same as the no-action alternative.	Same as the no-action alternative.	Same as no action alternative.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Wilderness Resources and Values	<p>Wilderness values would be maintained by managing the Beaver and Chapel Basins as primitive and natural. This is a moderate long-term benefit for wilderness values. Wilderness values could be adversely affected in the long term without the designation of wilderness – a moderate impact. The opportunity for solitude has been adversely affected to a moderate degree for the short term but recurring basis by noise from boats, the tour boat public address system, and logging. The effect of noise from tour boat public address system is mitigable. The total area of wilderness in the central Upper Peninsula would not increase.</p>	<p>Wilderness values in the Beaver Basin would be preserved by wilderness designation (12,843 acres), a moderate long-term beneficial impact. Reducing the noise from tour boat public address system operations between Miners Castle and Chapel Rock would be a moderate long-term intermittent, beneficial impact on opportunities for solitude and natural quiet. Most of the Chapel Basin would be managed to preserve wilderness values, a major long-term beneficial impact. The area around Chapel Lake would be managed to allow improved trail development, a minor long-term adverse impact that is reversible. The total area of wilderness in the central Upper Peninsula would increase by almost 26% — a moderate beneficial impact for those who desire that kind of experience.</p>	<p>Overall, wilderness values would continue to benefit from managing much of the land within the Chapel and Beaver Basins under the primitive management prescription – a major long-term benefit. Reducing the sound on the public address system on the tour boats would improve wilderness values along the shoreline from the west boundary to Chapel Beach over the long term, but intermittently, to a moderate degree. Wilderness values in the Chapel and Beaver Basins would not be guaranteed without designated wilderness — a moderate, long-term, adverse impact.</p>	<p>There would be a moderate long-term benefit from continuing to manage Beaver Basin under the primitive prescription. Wilderness values would be reduced because management of a portion of Chapel Basin would change from backcountry to casual recreation – a moderate, long-term adverse impact. The opportunity for solitude and natural quiet would continue to be diminished by logging unless logging was reduced – a moderate, long-term, intermittent, adverse impact. Opportunities for solitude and natural quiet would improve with the reduction of noise from the public address system used on tour boats – a moderate, long-term, intermittent beneficial impact.</p> <p>Development of the Sevenmile Creek overlook would diminish the opportunity for solitude and natural quiet to a minor degree for the long term.</p> <p>Wilderness values could be adversely affected in the long term without the designation of wilderness – a moderate long-term impact.</p>	<p>Overall, wilderness values would be enhanced more than the preferred alternative because a larger area with wilderness characteristics would be preserved (18,063 acres) – a long-term major benefit. Reducing noise from tour boat public address system operations between Miners Castle and Chapel Rock would be a moderate long-term intermittent, beneficial impact on opportunities for solitude and natural quiet. However, motorized boat use would be prohibited within the 0.25-mile-wide portion of Lake Superior from Miners Beach to the mouth of Spray Creek. This would remove much of the noise from motorized boats — a long-term moderate beneficial impact on opportunities for solitude and natural quiet, and other wilderness values. The total area of wilderness in the central Upper Peninsula would increase by about 33% — a major, long-term, beneficial impact. for those who desire that kind of experience.</p>

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Socioeconomic Resources</b>					
	<p>The long-term beneficial impacts of continuing existing management and operations would continue to be minor to moderate compared to the overall economy of Alger County. There would be some benefits from expenditures of about \$21 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some short-term moderate benefits for some individuals and businesses involved with national lakeshore daily/annual operations.</p> <p>Alger County would continue to receive payment in lieu of taxes from the federal government for lands that have been previously acquired, a continuing long-term moderate beneficial impact.</p>	<p>Overall, the long-term benefits would be moderate compared to the economy of Alger County. There would be some benefits from expenditures of about \$50 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.</p> <p>National lakeshore operations would be a continuing long-term, beneficial contribution to the local economy.</p>	<p>Overall, the long-term benefits would be minor to moderate compared to the economy of Alger County. There would be some benefits from expenditures of about \$37 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.</p> <p>National lakeshore operations would be a continuing long-term, beneficial contribution to the local economy.</p>	<p>Overall, the long-term benefits would be moderate to major compared to the economy of Alger County. There would be some benefits from expenditures of about \$74 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.</p> <p>National lakeshore operations would be a continuing long-term, beneficial contribution to the local economy.</p>	<p>Overall, the long-term benefits would be minor to moderate compared to Alger County' economy. There would be some benefits from expenditures of about \$37 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.</p> <p>National lakeshore operations would be a continuing long-term, beneficial contribution to the local economy.</p> <p>If restricting the tour boats from operating closer than 0.25 mile from shore between Miners and Chapel Beaches affected the tour's popularity so that the economic viability of the operation suffered, tours might be discontinued, a major adverse long-term impact on tour operations.</p>

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
<b>Visitor Use and Experience</b>					
Opportunities for Recreational Activities	Maintaining the existing diversity of recreational driving experiences would have a long-term minor beneficial impact on the recreational driving opportunities at the national lakeshore for those who prefer a more primitive, slower, unpaved driving experience. However, for those who prefer a less primitive paved experience, actions under this alternative would be a long-term minor adverse impact.	Impacts on opportunities for recreational activities would be long term and mixed. Reduced motorboating opportunities on the Beaver Lakes and in the 0.25 mile strip of Lake Superior between Spray Falls and the mouth of Sevenmile Creek would have a long-term minor adverse impact on visitors who desire this kind of experience in this area and a long-term moderate beneficial impact on visitors who find motorboat noise undesirable. Additional or improved recreational opportunities (hiking, camping, and touring historic resources) would provide a long-term moderate beneficial impact. Opportunities for primitive driving experiences would be eliminated, a long-term moderate adverse impact.	Impacts on opportunities for recreational activities would be mixed and long term. Additional opportunities for camping, hiking, and touring historic resources would have a major beneficial impact, and reducing opportunities for long primitive driving experiences leading to primary national lakeshore features would have a moderate long-term adverse impact.	Impacts on recreational opportunities would be mixed and long term. Additional opportunities would come from new facilities (e.g., a campground, trails, boat-in campsites, building rehabilitation, landscape restoration, the new overlook and road, and paved roads); these would have a major beneficial impact. The opportunity for a long, primitive driving experience that leads to primary features would be eliminated if the county paves H-58 between Little Beaver Lake Road and Grand Sable Lake, a moderate long-term adverse impact for those wishing for this kind of experience.	Impacts on recreational opportunities would be mixed and long term. Loss of motorboating opportunities on the Beaver Lakes and for 0.25 mile of Lake Superior between Miners Beach and the mouth of Sevenmile Creek would have a long-term major adverse impact. Additional or improved recreational opportunities (a new campground and hiking opportunities and opportunities to tour historic resources) would have a major beneficial impact. Additional hiking opportunities in Beaver Basin and along Little Beaver Lake road would have a moderate beneficial impact.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Access to Primary Lakeshore Features	<p>Long-term moderate beneficial impact on visitor access to primary features from continuing the existing diversity of access offered in the national lakeshore.</p> <p>Motorized and non-motorized boats would continue to approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.</p>	<p>Impacts on access to primary national lakeshore features would be long-term and mixed. Visitors would be able to visit more lakeshore features in a given length of time, a moderate beneficial impact. Due to improved access, certain areas might be crowded at times, a minor adverse impact. Loss of access to a portion of Twelvemile Beach via motorized boats would have a long-term moderate adverse impact for some visitors and a moderate beneficial impact on other visitors.</p> <p>Motorized and nonmotorized boats would continue to approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.</p>	<p>Compared to the no-action alternative impacts on access to primary features would be mostly beneficial and long term. Due to road improvements visitors could see more lakeshore features in a given length of time, a moderate long-term beneficial impact. On the other hand, certain areas could be crowded at times, a minor long-term adverse impact.</p> <p>Motorized and nonmotorized boats would continue to approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.</p>	<p>The effect of implementing alternative C on access to primary features would be mixed and long term. Visitors could visit more lakeshore features in a given period of time than under the no-action alternative, a major long-term beneficial impact; however, certain areas might also become crowded, a minor adverse impact.</p> <p>Motorized and nonmotorized boats would continue to approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.</p>	<p>Impacts on motorized access to primary features would be mostly adverse and long term. Notably, the opportunity to get close-up (less than 0.25 mile) views of cliffs and beaches from Miners Beach to Chapel Beach from a tour boat or other motorboat would be lost, a major adverse impact.</p> <p>If this change affected the tour's popularity so that the economic viability of the operation suffered, tours might be discontinued, a major adverse long-term impact on visitors.</p> <p>Commercial kayak tours, which provide good views of the cliffs from the water, would experience a minor long-term beneficial impact from the removal of motorized boats in the primitive prescription.</p>

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Noise	<p>Man-made noise from snowmobiles, motorized boats, personal watercraft outside the 0.25-mile boundary, the public address system on Lake Superior tour boats, and chainsaws from logging operations would continue to have a short-term moderate adverse impact on the visitor experience. (Because there are several sources of noise, which sometimes overlap, the intensity was determined to be moderate.) Sounds from vehicles on the road to Little Beaver Lake (especially sounds from towed trailers or campers) carrying into Beaver Basin would continue to cause a short-term minor adverse impact on visitors there because the noise disturbance is intermittent and of short duration.</p>	<p>Boat noise would be reduced along 18 miles (from Miners Beach to the mouth of Sevenmile Creek) of the shoreline and adjacent areas, resulting in a minor long-term beneficial impact on the visitor experience. Sounds from vehicles on the road to Little Beaver lake would cause a recurring, short-term, minor, adverse impact on visitors seeking a wilderness-type experience in the Beaver Basin.</p>	<p>Man-made noise from snowmobiles, motorized boats, and chainsaws from logging operations would continue to have a long-term, moderate adverse impact on the visitor experience. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact.</p>	<p>Man-made noise from snowmobiles, motorized boats, and chainsaws from logging operations would continue to have a long-term, moderate adverse impact on the visitor experience. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact.</p>	<p>Alternative E would have long-term beneficial impacts related to reducing man-made noise in the national lakeshore. Boat noise would be reduced along 18 miles (from Miners Beach to the mouth of Sevenmile Creek) of the shoreline and adjacent areas, resulting in a moderate long-term beneficial impact on the visitor experience. Reduced noise from the modified tour boat public address system from the west boundary to Chapel Beach would be a long-term, moderate, beneficial, intermittent impact on people looking for a quiet experience. Reduced motorboat and vehicle noise near Beaver Lakes would also have a minor beneficial impact.</p>

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Scenic Character of County Road H-58	Maintaining the scenic character on H-58 would be a long-term minor beneficial impact on visitors seeking a slow-speed scenic driving experience and a long-term minor adverse impact on visitors looking for a faster, route between Munising and Grand Marais (an alternate paved route using Highways 77 and 28 already exists).	If recommended changes were made, moderate long-term adverse impact on H-58's scenic character.	Same as preferred alternative.	Same as preferred alternative.	Same as preferred alternative.

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
Opportunities for People with Disabilities	<p>Although many outdoor attractions would continue to be available to persons with disabilities, and others that are interpreted through photographs and pamphlets, some important visitor-oriented and operations facilities (including lakeshore headquarters) would remain inaccessible. Thus, moderate long-term adverse effects on persons who are disabled would continue.</p>	<p>Providing a new campground at Miners and a day use area at the Grand Marais Coast Guard Station (both accessible to people with disabilities) might make it easier for people with disabilities to get to, see, or use additional national lakeshore features. These actions would have minor long-term beneficial impacts on visitors with disabilities.</p> <p>Moving the headquarters function to a new administration building near Munising and consolidating administrative and maintenance in a new facility near Grand Marais (both accessible to visitors with disabilities) would have a major long-term beneficial impact on staff and others with disabilities who might need to conduct business in the national lakeshore.</p>	<p>Making the Miners campground accessible to people with disabilities would have a minor impact on these visitors.</p> <p>Moving the headquarters function to a new administration building near Munising and consolidating administrative and maintenance in a new facility near Grand Marais (both accessible to people with disabilities) would have a major long-term beneficial impact on staff and others with disabilities who might need to conduct business in the national lakeshore.</p>	<p>Providing a new road to Sevenmile Creek overlook, a new campground at Miners, and a day use area at the Grand Marais Coast Guard Station (accessible to people with disabilities) would make it easier for people with disabilities to get to, see, or use additional national lakeshore features. These actions would have minor long-term beneficial impacts on visitors with disabilities.</p> <p>Moving the headquarters function to a new administration building near Munising and consolidating administrative and maintenance in a new facility near Grand Marais (both accessible to visitors with disabilities) would have a major long-term beneficial impact on staff and others with disabilities who might need to conduct business in the national lakeshore.</p>	<p>Under this alternative, Little Beaver Lake would no longer be accessible to visitors with disabilities, the new campground at Miners would be accessible to people with disabilities, and the Grand Marais Coast Guard Station would have a new day use area that would also be accessible to people with disabilities. Compared to the no-action alternative, these measures would have a minor long-term beneficial impact on visitors with disabilities.</p> <p>Moving the headquarters function to a new administration building near Munising and consolidating administrative and maintenance in a new facility near Grand Marais (both accessible to people with disabilities) would have a major long-term beneficial impact on staff and others with disabilities who might need to conduct business in the national lakeshore.</p>

	No Action	Preferred Alternative	Alternative A	Alternative C	Alternative E
National Lakeshore Operations	<p>Moderate long-term adverse impact from inefficient and dispersed facilities and limited space.</p> <p>Emergency response times to some areas would continue to be slow – a long-term moderate adverse impact.</p> <p>The continuation of the existing motorized access for national lakeshore operations is a long-term minor beneficial impact on operational efficiency by allowing employees to continue to quickly access an area and to transport necessary maintenance equipment and supplies.</p>	<p>Moderate long-term benefit on national lakeshore operations from consolidating operations in new facilities at both ends of the national lakeshore.</p> <p>Improvements to H-58, if made by the county, would result in a minor long-term decrease in emergency response times in the central and eastern portions of the lakeshore.</p> <p>Precluding staff use of motorboats in national lakeshore waters adjacent to the proposed Beaver Basin wilderness and Twelvemile Beach shoreline, except in emergencies, would have a short-term recurring minor adverse impact on national lakeshore operations. (Administrative access to Little Beaver Lake, which is by car or truck, and to Chapel Lake and Falls, which is by foot, would not change.)</p>	<p>Moderate long-term benefit from consolidating operations in new facilities at both ends of the national lakeshore.</p> <p>If the county paves H-58 as recommended, emergency response times in those portions of the lakeshore would improve, a minor long-term benefit.</p> <p>There would be no change in, and thus no new impacts on, staff access (for maintenance and resource management) to the Beaver Lakes, along the Lake Superior shoreline, and the Chapel area.</p>	<p>Moderate long-term benefit from consolidating operations in new facilities at both ends of the national lakeshore.</p> <p>If the county paves H-58 as recommended under this alternative, emergency response times would decrease, a minor long-term benefit because it would remain, by design, a slow-speed road.</p> <p>Continued motorized access for maintenance and resource management activities at the Beaver Lakes and along the Lake Superior shoreline, and changing access to the Chapel area from hiking to vehicles would make administrative access more efficient in these areas.</p>	<p>The impacts of implementing alternative E on national lakeshore operations would be mixed. The proposed consolidated operations facilities would increase efficiency – a long-term moderate benefit.</p> <p>If changes are made by the county as recommended, improving H-58 would improve emergency response times in some areas, a minor long-term benefit.</p> <p>Precluding staff use of motorboats in national lakeshore waters adjacent to the proposed wilderness (about 18 miles) except in emergencies would have an adverse impact on the operational efficiency of the national lakeshore staff. Changes to mode of access would have an adverse impact on national lakeshore operations in Beaver Basin. Altogether, changes in mode of access would have a moderate long-term adverse impact on the operational efficiency of the national lakeshore staff.</p>

## ALTERNATIVES DISMISSED FROM FURTHER CONSIDERATION

Alternatives B and D, presented in *Newsletter 3* and a series of public meetings, were eliminated from further consideration. In that newsletter, alternative B's focus was the protection of the Lake Superior watershed (including its inland lakes, wetlands, streams, and rivers) in and adjacent to the national lakeshore. Cooperative management of the watershed with other entities such as the U.S. Forest Service, Michigan Department of Natural Resources, ForestLand Group, Limited Liability Corporation, and other private landowners were to be emphasized. Recreational use on publicly accessible lands was to be supported and encouraged, but facilities and activities that could degrade water quality would have been carefully monitored and managed.

During the analysis of the draft alternatives, alternative B scored exceptionally well in terms of protecting natural resources and processes (a mandate for the National Park Service). It did not score well according to the other criteria such as providing for visitor enjoyment and access and did not receive much public support. Therefore, it was decided to add some of alternative B's watershed protection measures into the preferred alternative and eliminate this alternative from further consideration.

Alternative D's focus was centered on a wilderness proposal that would not require additional land or easement purchases by the National Park Service. The Beaver Basin area (within the shoreline zone between Spray Falls and the mouth of Sevenmile Creek) and adjacent Lake Superior waters within the national lakeshore were to be proposed for designated wilderness. Vehicular access to Little Beaver Lake campground would have remained. Some cultural and natural features at the ends of the lakeshore would have been easier to get to and would have more facilities and amenities than at present.

During the analysis of the draft alternatives, alternative D did very well and many people supported the concept, however the alternative did not address many public concerns of more and convenient access to the national lakeshore's significant features. Therefore, it was decided to use alternative D as the foundation for the preferred alternative, add some of the watershed protection elements from alternative B (cooperative management within watershed and reduce impacts at stream crossings, which received public support), and incorporate alternative C actions that would improve public access to significant national lakeshore features. Since alternative D is the foundation for the preferred alternative, the planning team decided to simplify the *Draft General Management Plan and Wilderness Study Environmental Impact Statement* and eliminate alternative D from further analysis.

In addition, to complete alternatives some individual actions were considered but dismissed from further consideration. They are as follows:

A drive-in campground and trail system was considered at Grand Sable Lake. This campground was originally proposed in the 1981 *General Management Plan*. The planning team considered this campground but decided it was ill advised for biological reasons. The campground's proximity to the Grand Sable Dunes would likely threaten the integrity of one of the last naturally functioning dune systems on the upper Lakes, the richest orchid flora in Michigan, and a large tract of prime habitat for the federally listed Pitcher's thistle. The presence of the campground would inevitably result in more foot traffic in the dunes even if no trails are proposed or built. This increase in traffic has the real potential to compromise one of the most pristine dune-fields in the Great Lakes Basin. Abundant opportunity for developing additional

camping would seem to be available outside the national lakeshore in or close to Grand Marais.

Also, a road connecting the lower loop of the Hurricane River Campground with the Au Sable Light Station was considered. Currently, the two are connected with a 1.5-mile

footpath. The planning team considered the feasibility of constructing a road to the light station. Given the wetlands nature of the area, the planning team could not find an environmentally acceptable option and therefore did not consider road construction in any of the alternatives that were carried forward.

## ENVIRONMENTALLY PREFERRED ALTERNATIVE

This table shows how each alternative would or would not achieve the requirements of sections 101 and 102(1) of the National Environmental Policy Act and other environmental laws and policies. In the National Park Service, this requirement is met by (1) disclosing how each alternative meets the criteria set forth in section 101(b), which are listed in table 5 below, and by (2) presenting any inconsistencies between the alternatives analyzed and other environmental laws and policies (Director's Order 12, 2.7.E). According to section 101, this alternative would cause the least damage to the biological and physical environment, and best protect, preserve, and enhance historic, cultural, and natural resources. It would also "create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." Although all alternatives in this plan rated well, which is not surprising because elements that were not

environmentally sound were eliminated from consideration, the preferred alternative best met the criteria of section 101(b).

The scores on table 5 show that the alternatives are fairly close. The preferred alternative rated high in all categories except one (achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities). Alternative C scored better than the preferred alternative for that criterion but scored slightly lower on two other criteria (fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations and enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources). The no-action alternative and alternatives A and E scored lower than the preferred alternative or alternative C. Therefore the preferred alternative was also chosen as the environmentally preferred alternative.

TABLE 5: ENVIRONMENTALLY PREFERRED ALTERNATIVE ANALYSIS

Criteria	Alternatives				
	No Action	Preferred	A	C	E
Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.	1*	2*	1	1	2
Ensure safe, healthful, productive, and esthetically and culturally pleasing surroundings for all Americans.	2	2	2	2	2
Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.	1	2	1	2	1
Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and a variety of individual choices.	2	2	1	2	1
Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.	2	1	2	2	1
Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.	1	2	1	1	2
<b>Total Points</b>	<b>9</b>	<b>11</b>	<b>8</b>	<b>10</b>	<b>9</b>

1\* = Alternative only partially achieves the intent of the criteria set forth in section 101(b) of the National Environmental Policy Act.

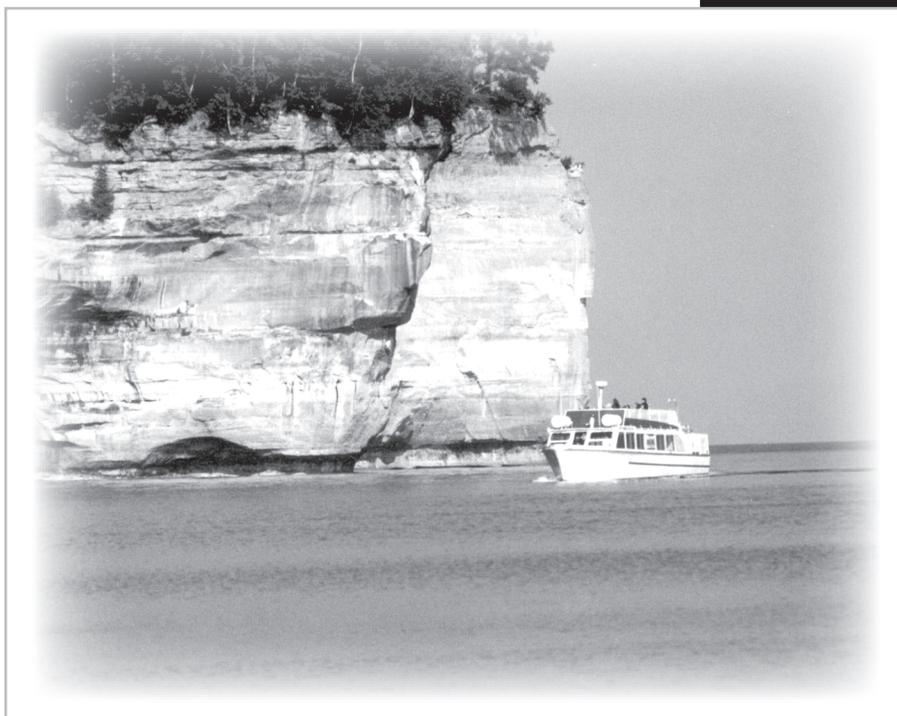
2\* = Alternative achieves the intent of the criteria set forth in section 101(b) of the National Environmental Policy Act to cause the least damage to the biological and physical environment, and best protect, preserve, and enhance historical, cultural, and natural resources.

Note: There were no “low” ratings because elements that were not environmentally sound were eliminated from consideration.



Chapter 3

THE  
AFFECTED  
ENVIRONMENT





## INTRODUCTION

This chapter describes the existing environment that could be affected by actions proposed in this general management plan and wilderness study for Pictured Rocks National Lakeshore. This chapter includes the specific topics that are analyzed to determine the environmental impacts of the alternatives. These topics were selected based on federal

law, regulations, executive orders, NPS expertise, and concerns expressed by other agencies or members of the public during scoping. The conditions described established the baseline for the analyses of effects found in the chapter on “Environmental Consequences.”

## CULTURAL RESOURCES

### HISTORICAL OVERVIEW

#### Prehistory

Evidence has been found that prehistoric peoples occupied the Upper Peninsula of Michigan from the Paleo-Indian period through the Archaic and the Woodland eras. In each of these ages, people tended to live in fishing camps along the Lake Superior shoreline in warm weather and in inland camps from which they hunted in cold weather. Over time, more specialized tools were developed that permitted easier exploitation of resources. Little agriculture developed because of a short growing season.

#### History

By 1500 the Chippewa were firmly established in the Upper Peninsula. Although their arrival date in the Pictured Rocks area has not been precisely established, small groups lived there when the first Europeans, the French, arrived in the early 1600s. Like the population of the Late Woodland period, the Chippewa, too, occupied shoreline settlements in spring and summer while moving inland during the winter season.

Following contact with white men, the history of the Chippewa can be said to be one of resource exploitation and a growing dependence on the goods of European culture. The French induced the American Indian population to exchange pelts for beads, copper, brass and iron implements, guns, and liquor. The French were primarily interested in making money from the fur trade and did not establish settlements or farms. The British, who ruled the area after 1763, did nothing to change the social and economic trends begun by the French. Following acquisition of the area by the United States in 1783, whites

pushed the Chippewa aside to settle the wilderness and exploit the land.

In the immediate national lakeshore area, the Chippewa lived on Grand Island and later occupied the mainland near the community of Old Munising. They established a cemetery on Sand Point and used the Grand Sable Dune area for special purposes, including fasting and gravesites. Abandoned lodges were noted along the shore of Grand Marais in 1826. The Chippewa relinquished their Upper Peninsula lands to the United States in 1836.

With the introduction of the Bessemer process in America after the Civil War, the production of steel emerged as an important industry in America. Pig (crude) iron, the product of a blast furnace, was refined to produce steel and wrought iron. The Schoolcraft blast furnace was constructed near Munising Falls in 1867, and the first pig iron was produced in 1868. About nine brick or stone kilns were originally constructed near the furnace, and at least 20 more were built during succeeding years in the nearby area to produce the necessary charcoal from the area's hardwood forests. A small company town, which has come to be known as Old Munising, was established along Munising Creek below the furnace, later spreading to an area along the south bay. Iron manufacture and its attendant commercial activities served as the financial mainstay of the area's economy until 1877 when the furnace closed.

Logging operations in the Pictured Rocks area began about 1880. Some of the first cuttings were white pine, which was highly valued because of its relatively light weight, ease of transport, and suitability as building material. In 1882 Thomas Sullivan established the first logging camp in what is now the national lakeshore; this camp came to be known as Sullivan's Landing. During the three years that the camp operated near present-day

Twelvemile Beach, some 50 million board feet of white pine were cut. About 10 years later, a second white pine logging boom began; this boom far overshadowed the first one. A wooden chute, known as the Log Slide, was constructed near the Grand Sable Dunes. The cut logs were hauled by horses to the slide, slid down to the beach below, and towed inside log booms to the mills at Grand Marais.

Although the initial logging activity in the national lakeshore area concentrated on harvesting large white and red pine stands, subsequent logging activity, beginning in the 1890s and lasting through the 1930s, periodically cut the upland hardwoods for cord wood for blast furnace charcoal, maple woodenware, and hardwood veneer mills. Hemlock was cut to facilitate the hide tanning operations in Munising. Soon after 1900, smaller trees were taken for pulpwood to feed the Munising Paper Company plant, which opened in 1904. Forest regrowth in what is now the national lakeshore was subsequently cut during the late 1950s and early 1960s for pulpwood. Harvesting continues on lands in the inland buffer zone.

With the disappearance of the iron industry and the temporary decline of the timber industry during the early 1900s came renewed attempts to develop a few small family subsistence farms in the area. The Bell and Abrahamson farms in Grand Marais, as well as the Riihima and Becker farms near Munising, produced dairy and staple crops for local consumption. Many of these old farm fields, now clearings, are visible, although most of the buildings have collapsed or been removed.

Lake Superior influenced the development and population of the national lakeshore area to a large degree. Dangerous cliffs, offshore reefs, and stormy seas imperiled mariners in the 1840s and 50s when commercial traffic began on the lake. Aids to navigation were developed in the form of light stations (Au Sable -1874 and Grand Marais Harbor of Refuge in 1897), a U.S. Lifesaving Station in

Grand Marais (1895-1938), and U.S. Coast Guard motor lifeboat stations in Munising and Grand Marais (1933-1960 and 1938-1975). These stations influenced the commercial and social fabric of life for many years in the towns that flank the lakeshore.

Another historic use of the area included the development of post-World War II family and corporate “camps” in the Upper Peninsula and within what is now the national lakeshore. The Michigan-Wisconsin Pipeline Company owned several hundred acres in the Beaver Basin (now in the national lakeshore), where it developed a resort camp for employees and clients during the early 1950s. Access roads, trout ponds, deer feeding structures and a boathouse on Beaver Lake were part of this development. Along with the corporate camp, several family fishing and hunting camps sprang up on lakeside properties or forested lands that were owned by their builders or leased from the Cleveland Cliffs Iron Company. (Forestry Division).

## **ARCHEOLOGICAL RESOURCES**

Various studies have examined and evaluated archeological resources in Pictured Rocks National Lakeshore. A survey of the national lakeshore’s lakeshore zone and the mouths of its rivers, entitled “Final Report: An Archaeological Survey of the Pictured Rocks Lakeshore,” was conducted under contract by Jeffrey P. Briggs of the University of Michigan in 1968. In 1979 NPS Denver Service Center personnel conducted an intensive archeological recovery effort centered on the Munising Falls area, where a parking area, comfort station, and visitor center were to be constructed.

During the 1980s and early 1990s, archeological surveys by NPS Midwest Archeological Center personnel have focused on Section 106 (National Historic Preservation Act of 1966, as amended) compliance documentation for proposed parking areas and comfort stations,

as well as restoration efforts at the Au Sable Light Station. These surveys, as well as previous archeological work in the national lakeshore, have been recorded in “Archeological Inventory and Evaluative Testing in Pictured Rocks National Lakeshore, Michigan, 1985-1990,” by Bruce A. Jones, *Occasional Studies in Anthropology* No. 30, 1993.

American Indians have lived in what is now Pictured Rocks National Lakeshore since the end of the Ice Age. There are 38 recorded archeological sites in the national lakeshore; most of these are associated with Woodland and Archaic period seasonal habitation sites. Most of the known sites are near today’s national lakeshore developed areas, such as on high sand bluffs adjacent to Lake Superior, in coves in sandstone bedrock along the lake’s shoreline, near streams and the mouths of creeks and rivers, and along inland lake shorelines; these areas provided natural habitation sites in past times and are attractive to people today for the same reasons. Artifacts associated with the known sites include fire-cracked rock, bi-polar cores, chert and quartz flakes, grit-tempered sherds, and other lithic scatter. Much of this material has been recovered at short-term hunting or fishing camps apparently used by Indians traveling up and down the lake. Sites are rarely found in the inland upland areas. Most sites are subsurface.

Archeological resources in the national lakeshore reflect all periods of human occupation – from the early hunters to late prehistoric fishfolk to historic iron and timber industry operations, to sailors on the lake. Historic archeological sites in the national lakeshore are primarily associated with the iron (furnace/smelter ruins and charcoal kilns), timber (logging railroads, roads, and camps), and maritime industries (shipwrecks), as well as with small farming operations. Historic shipwrecks in the national lakeshore were examined and evaluated during an NPS Southwest Regional Office study by C. Patrick

Labadie, entitled *Submerged Cultural Resources Study, Pictured Rocks National Lakeshore* (Southwest Cultural Resources Center Professional Papers No. 22), published in 1989. The lake bed and everything on it, including shipwrecks, are under the jurisdiction of the state.

## ETHNOGRAPHIC RESOURCES

The principal study that examines ethnographic resources in the national lakeshore, entitled (Draft) *Traditional Ojibway Resources in the Western Great Lakes*, was prepared by the University of Arizona, Tucson, Bureau of Applied Research in Anthropology on June 2, 1999.

The Ojibway have cultural affiliation with the lands of Pictured Rocks National Lakeshore. Although the national lakeshore and its surrounding areas may have been visited or used occasionally by traveling parties, warriors, or refugees belonging to other ethnic groups, the area remained under Ojibway control until 1820, when the first land cession treaty was signed by leaders of the local bands and representatives of the U.S. Government. Six Ojibway tribes may rightfully claim cultural affiliation with the lands in the national lakeshore, including: the Sault Ste. Marie Tribe of Chippewa Indians; the Bay Mills Community; the Bad River Band of Lake Superior Chippewas, Wisconsin; the Red Cliff Band of Lake Superior Chippewas, Wisconsin; the Garden River Band, Ontario; and the Manitoulin Island Community of Ojibway, Ottawa, Ontario.

There are at least five other Ojibway bands whose lands are on or near the north banks of the St. Mary’s River and north shore of Lake Superior and have close ties with the Garden River and Sault Ste. Marie Ojibway. These are the Batchewana Band, Thessalon Band, Serpent Band, Sagamak Nishnaabek Band, and White Fish Lake Band.

Lands within the boundaries of the national lakeshore are believed to have been and continue to be of spiritual and religious significance to the Chippewas. The Grand Sable Dunes were considered to be a sacred place; a Euro-American visitor in 1835 reported finding an Indian burial/spirit house and a probable vision quest site on the dunes. Other areas in the national lakeshore of interest to American Indians are Lake Superior, the pictured rocks, and high prominences such as Miners Castle. Portions of the forested areas are also important for the variety of game and plant species they offer. Former burial grounds are on Sand Point and at the end of City Limits Road in Munising. Because their subsistence cultural patterns were tied closely to Lake Superior, canoes, and fishing, Chippewa encampments were generally in sheltered areas along the lakeshore that afforded protection from northwest gales. The Munising/Grand Island and Grand Marais sites, as well as other creek and river mouths, were suitable, but much of the shoreline between was too unprotected for establishing campsites.

## CULTURAL LANDSCAPES AND HISTORIC STRUCTURES

Initial reconnaissance by the NPS staff suggests that various cultural landscapes might be eligible for listing on the National Register of Historic Places. However, with one exception (the Au Sable Light Station), the required studies have not yet been undertaken. The eligibility of these landscapes should be determined in consultation with the state historic preservation officer. Cultural landscapes in the national lakeshore that require further assessment include the Munising (Sand Point) Coast Guard Station, Grand Marais Coast Guard Station, farmsteads, apple orchards, and the MI-WI Consolidated Pipeline camp.

The Munising Range Light Station property is a former U.S. Coast Guard Auxiliary

Operations Station that includes the front and rear range lights and the associated property in Munising (a total of 0.32 acres of land, lot 17). The buildings are thought by national lakeshore staff to be eligible for the National Register of Historic Places, although no formal assessment has yet been conducted. The U.S. Coast Guard will continue to maintain the operating aids to navigation (the front and rear range lights) that comprise two of the six structures on the property. The lot size is too small to support visitor use parking; therefore, when the building is no longer required for office purposes, the national lakeshore could adaptively use the building for purposes such as museum collection storage or lease to an organization or private entity, similar to the arrangement at Grand Marais.

Six structures are reported on the site: a metal garage, a brick and wood station building, a brick paint locker, the Munising front range light (brick and cast iron cylindrical tower), the Munising rear range light (brick and cast iron), and a skeletal steel VHF tower.

## HISTORIC PROPERTIES

### National Register of Historic Places

The following two historic properties in the national lakeshore are listed in the National Register of Historic Places; both encompass significant archeological components:

Au Sable Light Station, listed on May 23, 1978, under national register criteria A (for its association with events that have made a significant contribution to the broad patterns of American history) and C (for its significant architectural characteristics). It also contains an archeological site.

Schoolcraft Furnace Site, listed on December 28, 1977, under national register criterion A. It also contains an archeological site.

The following two historic properties in the national lakeshore have been determined eligible for listing on the National Register of Historic Places:

The Grand Marais Coast Guard Station, determined eligible for listing by the Michigan State Historic Preservation Officer on November 15, 1990, under criteria A and C.

The Munising (Sand Point) Coast Guard Station, determined eligible for listing by the Michigan State Historic Preservation Officer on January 27, 1999, under criteria A and C.

Other archeological sites/historic properties that may meet national register criteria include numerous archeological sites along exposed beaches (particularly in the Miners and Chapel Beach areas) as well as at inland sites associated with prehistoric shorelines or lakes.

### List of Classified Structures

The List of Classified Structures is a computerized, evaluated inventory of all historic and prehistoric structures having historical, architectural, or engineering significance. The following structures have been placed on the List of Classified Structures for the national lakeshore:

- Sand Point Coast Guard Station main building
- Sand Point oil house
- Sand Point boathouse
- Au Sable keeper's residence
- Au Sable garage
- Au Sable Lighthouse
- Au Sable assistant keepers' duplex residence
- Au Sable metal oil house
- Au Sable brick kerosene shed
- Au Sable brick privy #1
- Au Sable brick privy #2
- Au Sable fog signal house

- Au Sable boathouse
- Au Sable seawall
- Au Sable cistern
- U.S. Coast Guard dwelling (Grand Marais)
- U.S. Coast Guard Station quarters #1 (Grand Marais)
- Blast furnace
- Kilns

### MUSEUM COLLECTIONS

The museum collection housed at the national lakeshore includes more than 15,000 catalogued items representing a variety of natural and cultural themes. More than 36,000 catalogued archeological artifacts are housed at the Midwest Archeological Center in Lincoln, Nebraska. Archeological artifacts in the center's collection include thousands of items, most of which have not been catalogued.

The park collection has an underrepresentation of geological and other natural history specimens. No natural history study collections are available for the natural resources staff. Future acquisition efforts for the collection will focus on furnishings for the Au Sable Light Station, the Munising (Sand Point) Coast Guard Station, and additional natural history collections.

Some maritime theme items in the national lakeshore's collection are exhibited in the Grand Marais Maritime Museum. Others are on display at the Munising Falls Interpretive Center.

The main park collection is housed on the third floor of the Grand Marais Maritime Museum, in the loft of the Abrahamson Barn, and at park headquarters in Munising. Environmental conditions for the museum collection stored at all locations are substandard. Temperature and humidity controls are nonexistent, resulting in wide variability for these parameters. Although the Abrahamson Barn artifacts are stored on

shelves and covered with plastic, the plastic is covered with bat guano.

Improving collection storage and curatorial processing has been delayed as the national

lakeshore waits for funding to construct a new headquarters building in Munising. Design for the new building includes space for storage and collection management activities.

## NATURAL RESOURCES

### SPECIES OF CONCERN

Species of concern includes federal and state threatened or endangered species as well as species whose status globally or locally may be approaching a level of rarity that warrants monitoring at the state or federal level. The U.S. Fish and Wildlife Service was consulted to confirm listings of threatened or

endangered species known or likely to occur in the national lakeshore.

The National Park Service also consulted with the Michigan Department of Natural Resources, Natural Features Inventory to obtain a current list of state and federal species within the national lakeshore.

**TABLE 6: LIST OF SPECIES OF CONCERN AT PICTURED ROCKS NATIONAL LAKESHORE**

		Federal Threatened	Federal Endangered	State Threatened	State Endangered	State Species of Concern
<i>Alces alces</i>	Moose					X
<i>Botrychium acuminatum</i>	Acute-leaved moonwort				X	
<i>Botrychium campestre</i>	Prairie moonwort, dunewort			X		
<i>Botrychium hesperium</i>	Western moonwort			X		
<i>Botrychium mormo</i>	Goblin moonwort			X		
<i>Callitriche hermaphroditica</i>	Autumnal water-starwort					X
<i>Calypso bulbosa</i>	Calypso or fairy-slipper			X		
<i>Canis lupus</i>	Gray wolf	X			X	
<i>Cirsium pitcheri</i>	Pitcher's thistle	X		X		
<i>Crataegus douglasii</i>	Douglas hawthorn					X
<i>Cryptogramma stelleri</i>	Slender cliff-break					X
<i>Cypripedium arietnum</i>	Ram's head lady-slipper					X
<i>Elymus glaucus</i>	Blue wild-rye					X
<i>Elymus mollis</i>	American dune wild-rye					X
<i>Empetrum nigrum</i>	Black crowberry			X		
<i>Falco peregrinus</i>	Perigrine falcon	X			X	
<i>Haliaeetus leucocephalus</i>	Bald eagle	X			X	
<i>Listera auriculata</i>	Auricled twayblade					X
<i>Myriophyllum alterniflorum</i>	Alternate-leaved water-milfoil					X
<i>Myriophyllum farwellii</i>	Farwell's water-milfoil			X		

		Federal Threatened	Federal Endangered	State Threatened	State Endangered	State Species of Concern
<i>Pandion haliaetus</i>	Osprey			X		
<i>Pinguicula vulgaris</i>	Butterwort					X
<i>Stellaria longipes</i>	Stichwort					X
<i>Tanacetum huronense</i>	Lake Huron tansy			X		
<i>Trumertropis huroniana</i>	Lake Huron locust			X		
<i>Trisetum spicatum</i>	Downy oat-grass					X
<i>Vaccinium cespitosum</i>	Dwarf bilberry			X		

As the bald eagle population in the Great Lakes area has increased, they have established nest sites and territories within the national lakeshore. The nests at the lakeshore are relatively isolated. There are no recreational uses within the primary or secondary buffer areas of each nest during critical periods. Boating is permitted on a lake near one of the nests in the tertiary buffer during critical periods, which is consistent with the *Northern States Bald Eagle Recovery Plan* (USFWS, 1983). Nest activity and success have varied each year.

In July 1999, the U.S. Fish and Wildlife Service proposed removing the bald eagle from the list of threatened species. When and if the bald eagle is delisted, a five-year nationwide monitoring program will be implemented to continue collecting data on the population. Inventories will continue at the national lakeshore.

The piping plover has nested within the national lakeshore boundary on the beach of Lake Superior at Grand Marais in the past, but there has been no evidence of use since 1992. The national lakeshore provides potential nesting and forage habitat.

Many of the species of concern identified at the national lakeshore, including pitcher's thistle, are found in the Grand Sable Dunes area (a designated research natural area);

others are found in various habitats throughout the national lakeshore.

The gray wolf is an endangered species that is proposed for reclassification to threatened by the U.S. Fish and Wildlife Service (USFWS 2000). Michigan would also reclassify the wolf if it is reclassified at the federal level (MDNR 2000). Late winter surveys indicated 216 wolves in the upper peninsula in 2000 (USFWS 2000). Because of winter conditions in the lakeshore, it is not likely that denning will occur within the national lakeshore. According to the Michigan Department of Natural Resources (MDNR 2000), the national lakeshore is not critical habitat because an adequate year-round food source is not available. Wolf use at the national lakeshore is limited and linked to the deer population and occurs during spring, summer, and autumn. Deer migrate out of the national lakeshore during the winter.

Grand Sable Dunes is a designated research natural area under NPS policies because the area contains many rare plants and few such undeveloped dunes remain in the Great Lakes area. Research natural areas are established for areas that are prime examples of natural ecosystems and areas with significant genetic resources with value for long-term baseline observational studies or as control areas for comparative studies in other areas. The Grand Sable Dunes are also designated a critical dune

area by the Michigan Department of Environmental Quality. This designation identifies the dunes as an environmental area warranting protection under the Michigan Coastal Management Program. East of Grand Marais there is a dune complex that is 5,453 acres, most of which is in state ownership.

## WETLANDS

The national lakeshore has an abundance of wetlands as identified in the *National Wetland Inventory*. The full range of wetland types, from riparian, palustrine, and lacustrine, can be found throughout the national lakeshore. Most are within the Beaver and Chapel Basins and were formed by glaciation and other geophysical processes.

Lake Superior forms the northern border of Pictured Rocks National Lakeshore. The lake has a maximum depth of 420 m (1,335 feet) but is relatively shallow in the national lakeshore. Its surface lies at an elevation of 187 m (600 feet) above sea level. The maximum tidal/storm elevation has been recorded at 604.3 feet. In recent times the lake level has varied several feet in response to changes in precipitation and evaporation.

The more prominent inland lakes are Grand Sable, Beaver, Little Beaver, Chapel, Little Chapel, Miners, Trappers, Legion, Kingston, and the Shoe Lakes. These lakes range in size from the 762-acre Beaver Lake to the 10-acre Miners Lake. Most of the inland lakes, with the exception of Grand Sable Lake and Chapel Lake, are shallow (3-6 m/10-20 ft in average depth). Many of the lakes have a moderate amount of dissolved nutrients and are very clear (visibility of 2-5 meters or 6-15 feet). Logging in the area and recurrent fires may have caused erosion and nutrient deposition in the lakes. Miners Lake and Little Chapel Lake exhibit the greatest levels of dissolved nutrients. Legion Lake, the Shoe Lakes, and Grand Sable Lake are the most deficient in nutrients. The inland lakes vary

considerably in their water chemistry, but many can be classified as moderately productive, brown, alkaline-water lakes.

The rivers and streams that flow to Lake Superior through the national lakeshore have a relatively steep gradient, including waterfalls, and are rather short. The more prominent waterfalls within the national lakeshore are Munising, Miners, Mosquito, Bridalveil, Chapel, Spray, and Sable Falls. Especially noticeable at the waterfalls is the brown color of the water, which is from humic acids originating from the breakdown of organic matter in wetlands headwaters. Portions of two rivers, both in the national lakeshore, are listed on the NPS "Nationwide Rivers Inventory" and were considered potentially eligible for designation under the Wild and Scenic Rivers Act. A 9-mile long segment of the Miners River between County Road H-58 and its mouth at Lake Superior is included on the inventory because of its recreational, fish, and wildlife values. A 6.5-mile long segment of the Mosquito River, from Section 17, T48N, R17W to its mouth with Lake Superior, is included on the inventory because of its scenic, recreational, geologic, and fish values.

Scattered shrub and forested wetlands are found on upland benches and in poorly drained topographic lows (about 10% of the national lakeshore). These patches contain black spruce (*Picea mariana*), white spruce (*Picea glauca*), white cedar (*Thuja occidentalis*), and larch (*Larix laricina*). Larger white cedar stands in the national lakeshore are southwest of Grand Sable Lake, south of Au Sable Point, along the southern and western edges of Beaver Basin, and east and south of Miners Basin.

Bogs in the national lakeshore are usually filled-in lake beds having a sphagnum base and containing heath-family (ericaceous) shrubs, e.g., leatherleaf (*Chamaedaphne calyculata*), bog rosemary (*Andromeda glaucophylla*), bog laurel (*Kalmia polifolia*),

and cranberries (*Vaccinium macrocarpon*; *V. oxycoccos*). Several species of orchids are found in association with bog communities. Four major bog areas are found in the lakeshore – at Sand Point, Beaver Lake, Legion Lake, and east of Twelvemile Beach campground. The best examples of marshes in the national lakeshore occur in shallow bays of large lakes and around the periphery of small lakes, most notably Miners Lake and Little Chapel Lake.

## INVASIVE SPECIES

### Nonnative Invasive Species

Nonnative invasive species are species that have been introduced into an environment in which they did not evolve and usually lack or have fewer natural enemies that limit their reproduction and spread (Westbrooks 1998). They may possess other characteristics that give them the advantage over native species; these include rapid or prolific reproduction, ability of eggs or seeds to withstand extremes in environmental conditions, production of biological toxins that suppress native species, the presence of spines, thorns, or fowl taste that deter predation, and parasitization of native species (Westbrooks 1998).

Of the nonnative plant species at Pictured Rocks National Lakeshore, the following are notably invasive and pose a serious threat to the native plant community of the Grand Sable Dunes: spotted knapweed (*Centaurea maculosa*), white sweet-clover (*Melilotus alba*), red clover (*Trifolium pratense*), and several species of hawkweed (*Hieracium* spp.). Baby's breath (*Gypsophila paniculata*), currently found on the border of national lakeshore, is a potential threat to the native dune plant community should it become established.

Periwinkle (*Vinca minor*) is an aggressively growing, shade-tolerant, understory species that is capable of threatening the spring flora of the northern hardwoods, including trillium,

Dutchman's breeches, spring beauty, hepatica, and squirrel corn.

Burdock (*Arctium minus*) is an exotic species that is found in small forest openings such as roadsides and the margins of parking lots. Spotted knapweed grows in this type of habitat as well as in the dunes.

Purple loosestrife (*Lythrum salicaria*) is a potential threat to habitats with moist soil and/or shallow, standing water along streams, lakes, and ponds of the national lakeshore. It has a strong foothold in the Naubinway area of Mackinac County to the southeast, and it is found occasionally in neighboring Marquette County to the west.

Blister rust is a nonnative, fungal saprophyte that attacks conifers and causes a deformity commonly known as "witch's broom." Currently its effects are limited. However, the beech blight is a fungus that has reached the eastern Upper Peninsula and is capable of altering the forest community structure.

Nonnative insect pests are a potential source of disturbance to the native plant communities. One such is the gypsy moth (*Lymantria dispar*), currently present in the national lakeshore but not in large numbers.

### Aquatic Invasive Species

Aquatic invasive species pose a threat to native plant and animal communities throughout the upper midwestern states. These organisms include the well-known sea lamprey and numerous other fish, mussels, crayfish, zooplankton, aquatic macrophytes, and parasite species. The species that pose the greatest threat can reproduce rapidly and compete for the same habitat or for the same food as native species. Some have defensive adaptations that make them unsuitable as food to native species, so that they are less likely than their native counterparts in the food web to be preyed upon. Some actively prey on or

parasitize native species. Aggressively growing, aquatic plants reduce light penetration in the water and grow so densely that they do not provide a protective habitat for native species. Once established, exotic species in an aquatic environment can rarely, if ever, be eliminated. The most effective means of control is prevention through management decisions and public education. The potential introduction of aquatic invasive species poses a serious threat to the health of the aquatic habitats of Pictured Rocks National Lakeshore.

The pathways for the introduction of aquatic exotic species already exists at Pictured Rocks National Lakeshore and can be identified as the routes used by humans in their recreational activities. Exotic species may cling to the exterior of boats, may be carried in the bilge water or bait fish bucket, may cling to line and/or ropes, may be carried in sediment trapped in anchors, or cling to the clothing of hikers near bodies of water.

The distribution of several nonnative aquatic species in the Upper Peninsula of Michigan is known:

- Purple loosestrife is found in adjacent counties.
- The spiny water flea (a Eurasian zooplankton species) has been documented from six inland lakes in the Upper Peninsula, including Beaver Lake and Grand Sable Lake. This species was first noticed in the national lakeshore in Beaver Lake (Whitman et al. 2002), and its status is monitored regularly. The spiny water flea was first observed in Grand Sable Lake in early August 2002 and will be monitored regularly.
- Zebra mussels have been identified in two inland lakes in the Upper Peninsula of Michigan and along the north shore of Lake Michigan, 45 miles distant.
- Sea lamprey populations are monitored at Pictured Rocks National Lakeshore in cooperation with the USFWS Sea Lamprey Control Division, and their data are available for the entire Great Lakes basin.

## WILDERNESS RESOURCES AND VALUES

### THE WILDERNESS ACT OF 1964

Public Law 88-577, National Wilderness Preservation System, more commonly known as the “Wilderness Act of 1964,” was established to enable Congress to set aside, preserve, and protect areas of pristine wilderness for the public to enjoy. Federal wilderness can be established only by an act of Congress.

The definition of wilderness is stated in the act as an area where “the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.” The land is also defined as an area that still holds its original character and does not have any permanent improvements from human intervention. The act continues by defining wilderness as an area that has “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” The land has to include 5,000 acres or enough continuous area to make feasible protecting and preserving it. The act’s definition of wilderness concludes by stating that the area can contain components of geological, ecological, or otherwise scientific, educational, scenic, or historical value.

Although there are activities that are prohibited in wilderness areas (Section 4 [c]), the act does make allowances for some special provisions (Section 4 [d]) (see page 37). The prohibited activities include commercial operations, permanent roads (except to meet the minimum administrative needs for health and safety emergencies), temporary roads, installations or structures, motorized vehicles or equipment, motorboats or landing of aircraft, and any other forms of mechanical transport.

These areas are extremely important to wildlife, vegetation, outdoor enthusiasts, scientists, and educators. They represent and

foster an area of untouched land, where the natural processes can continue to thrive and be observed.

### WILDERNESS RESOURCES IN THE CENTRAL UPPER PENINSULA

There are two designated wilderness areas in the Hiawatha National Forest in the central Upper Peninsula in Alger County — the Rock River Canyon (5,285 acres) and Big Island Lake (6,008 acres); Strangmoor Bog Wilderness (25,150 acres, also designated) is in Seney National Wildlife Refuge in Schoolcraft County. There are no state wilderness areas nearby. There is no designated wilderness in Pictured Rocks National Lakeshore.

### WILDERNESS PROCESS AT PICTURED ROCKS NATIONAL LAKESHORE

*NPS Management Policies* at the time of the 1981 planning effort precluded wilderness consideration on areas where the federal government did not control the underground mineral rights, which was the case at Pictured Rocks National Lakeshore. Therefore, wilderness suitability was not evaluated for the national lakeshore.

However, recently revised *NPS Management Policies* allow consideration of wilderness eligibility and designation on lands owned by the federal government with outstanding mineral rights. The written agreement between Cleveland Cliffs Iron Company (land subsequently purchased by the Kamehameha Schools and now being sold to the ForestLand Group, Limited Liability Corporation) and the National Park Service would most likely preclude mineral exploration or development in the national lakeshore. This is a deed restriction that stays with the property.

During the scoping process for this general management plan, the National Park Service was asked to evaluate the lands in the national lakeshore (specifically the Beaver Basin) for wilderness characteristics in response to public comments. Lands within the Beaver Basin and Chapel Basin met the criteria. The National Park Service, in response to numerous requests to resolve the wilderness issue at the national lakeshore, is completing the required wilderness study and accompanying environmental impact statement within the general management planning process.

The elements of the wilderness study have been integrated into this document. The national lakeshore staff and planning team worked together to determine if wilderness characteristics existed within the national lakeshore. The planning team then wove appropriate descriptions of desired resource conditions and visitor experiences into the management prescriptions to accommodate

the existence of wilderness characteristics. There continue to be opportunities for public involvement and comment with the review of this draft and during public meetings.

If the National Park Service approves the proposed wilderness, then a *wilderness proposal* will be prepared and forwarded to the secretary of the interior. The secretary of the interior reviews the NPS proposed wilderness and either approves or revises the proposal, and the result is forwarded to the president for his consideration. The president is then responsible for transmitting his recommendations to both houses of Congress (accompanied by maps and boundary descriptions). After the president's formal transmittal of the wilderness recommendation to Congress, Congress may enact the legislation needed to include the area within the national wilderness preservation system as "designated" and/or "potential" wilderness.

## SOCIOECONOMIC RESOURCES

The national lakeshore is entirely within Alger County. Because any economic or social impacts that result from implementing the approved plan are most likely to be local in nature, this county will serve as the socio-economic affected area for this planning effort.

The 42 miles of lakeshore in Pictured Rocks National Lakeshore are flanked by the towns of Munising on the west and Grand Marais on the east. Munising is the county seat for Alger County and serves as a gateway to the national lakeshore. Munising had a population of 2,539 according to the 2000 Census. National lakeshore headquarters are north of town at the end of Sand Point Road. The National Park Service and the U.S. Forest Service jointly run a visitor center in town. The headquarters of Hiawatha National Forest is also in Munising. Visitor services include grocery stores, motels, restaurants, and supply stores. Medical services are available at Munising Memorial Hospital. Visitor services are more limited in Grand Marais.

The national lakeshore serves a regional audience as well as attracting visitors from other parts of the country. Several hundred thousand visitors each year travel to the national lakeshore. State Routes 28 and 94 are the principal highways leading to Munising. County Highway H-58 provides access to the national lakeshore and connects Munising with Grand Marais, the eastern gateway town.

A national lakeshore ranger station and the Grand Marais Maritime Museum are in Grand Marais. The national lakeshore's Grand Sable Visitor Center is west of Grand Marais. These facilities are open only during the summer. The area around the eastern end of the national lakeshore is lightly populated. Burt Township's population, including the town of Grand Marais, was 480, based on the 2000 Census.

### POPULATION

Alger County has a relatively low population. This county is one of 83 counties in Michigan. In 2000 it ranked 77th in the state with a population of 9,862 or 0.1% of the state total. Since 1990, the county's population had grown by 890 persons or 9.9%. Although this was a healthy increase, Alger County accounted for less than 0.2 % of the state's growth during this 10-year period.

In contrast, Michigan's population in 2000 was 9,938,444. The population growth rate for Michigan was less than three-quarters that of Alger County or 6.9%. However, this represented a total increase of 643,147 persons from 1990 to 2000.

### INCOME

In 2000 the total personal income in Alger County was \$182,005,000. This income ranked 77th in the state and accounted for only 0.1% of the state total. In 1990 the total personal income was \$111,000,000. This income ranked 77th in the state. During these 10 years, Alger County's total personal income grew by 5.1% while Michigan has had the same growth rate. The national average was 5.5%.

Per capita personal income for the county was \$18,485 in 2000. This income was relatively low, comprising only 63% of the state's average of \$29,127. Alger County ranked 71st in the state. The national average per capita personal income was \$29,469. Since 1990, when the county per capita personal income was \$12,369, this per capita personal income grew by an average annual rate of 4.1%. Meanwhile, the state per capita personal income grew by 4.4%, and the national per capita personal income grew by 4.2%.

While growth in total personal income has kept pace with the rest of the state, total personal income for Alger County still remains low, which translates into a significantly lower per capita personal income when compared to the rest of the state. The historically low per capita personal income is an indication of a depressed economy.

#### Major Industries by Earnings

The earnings of people employed in Alger County increased from \$61,566,000 in 1990 to \$105,602,000 in 2000, a 71.5% gain (table 7). This increase represented a healthy average annual growth rate of 5.5%. In 2000, the major industries for Alger County (by earnings) were manufacturing at 36.9%, state and local government at 16.8%, and services at 16.7% of the total. In 1990 the largest industries were manufacturing representing 40.7% of earnings; state and local government at 19.2%; and services at 12.2%.

#### Major Industries by Employment

In 1990 there were 3,299 full- and part-time employees in Alger County. Manufacturing led the way, accounting for 24.3% (800 jobs) of the positions. Services, retail trade, and state and local government followed with 20.1% (664 jobs), 18.4% (606 jobs), and 14.8% (558 jobs) of the total positions respectively.

Although Alger County's population grew by 890 persons, the number of jobs increased by 715. By 2000 the number of full- and part-time employees had reached 4,014, a 21.7% increase over 1990 (table 8). By 2000, Services replaced Manufacturing as the top employer. Services had increased by 313 jobs. Manufacturing increased by only 51 positions and represented 21.2% (851 jobs) of all jobs in the county. State and local government was still an important sector in the county economy. This classification accounted for 13.9% (558 jobs) of the jobs, an increase of 70 positions.

TABLE 7: ALGER COUNTY, MICHIGAN: EARNINGS BY INDUSTRY

Industry Sectors	2000		1990	
	Earnings	% of Total	Earnings	% of Total
Manufacturing	\$38,919,000	36.85%	\$25,051,000	40.69%
State & Local Government	\$17,782,000	16.84%	\$11,814,000	19.19%
Services	\$17,678,000	16.74%	\$7,533,000	12.24%
Retail Trade	\$7,592,000	7.19%	\$5,768,000	9.37%
Finance, Insurance, & Real Estate	\$6,901,000	6.53%	\$1,218,000	1.98%
Construction	\$5,551,000	5.26%	\$3,066,000	4.98%
Transportation and Public Utilities	\$4,350,000	4.12%	\$2,691,000	4.37%
Federal Government	\$4,935,000	4.67%	\$1,878,000	3.05%
Wholesale Trade	\$1,222,000	1.16%	\$1,141,000	1.85%
Agricultural Services, Forestry, & Fishing,	(D)	(D)	\$899,000	1.46%
Military	\$278,000	0.26%	\$274,000	0.45%
Farm	(L)	(L)	\$233,000	0.38%
Mining	(D)	(D)	0	0.00%
Total	\$105,602,000	100.00%	\$61,566,000	100.00%

SOURCE: Bureau of Economic Analysis

(D) = Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

(L) = Less than \$50,000, but the estimates for this item are included in the totals.

TABLE 8. ALGER COUNTY, MICHIGAN FULL-TIME AND PART-TIME EMPLOYEES BY MAJOR INDUSTRY

Industry Sectors	2000		1990	
	# of Jobs	% of Total	# of Jobs	% of Total
Manufacturing	851	21.20%	800	24.25%
Services	977	24.34%	664	20.13%
Retail Trade	658	16.39%	606	18.37%
State & Local Government	558	13.90%	488	14.79%
Finance, Insurance, & Real Estate	321	8.00%	152	4.61%
Construction	223	5.56%	163	4.94%
Transportation & Public Utilities	134	3.34%	110	3.33%
Federal Government	94	2.34%	72	2.18%
Farm	73	1.82%	93	2.82%
Agricultural Services, Forestry, & Fishing	(D)	(D)	65	1.97%
Wholesale Trade	64	1.59%	53	1.61%
Military	20	0.50%	29	0.88%
Mining	(D)	(D)	(L)	(L)
Total	4,014	100.00%	3,299	100.00%

SOURCE: Bureau of Economic Analysis

(D) = Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

(L) = Less than \$50,000, but the estimates for this item are included in the totals.

## UNEMPLOYMENT

Another indicator of the general economic health of a region is the rate of unemployment. Alger County's unemployment rates have exceeded state and national rates. In 1990 Michigan's unemployment rate was about 7.6%. In 2000, this rate had declined to 5.8%. Nationally, in 1990, the unemployment rate was 5.6%, and it increased to 5.8% by 2000. In 1990 the unemployment rate for Alger County was 9.5%. By 2000, the level of unemployment was 8.6%. Higher unemployment in Alger County relative to the state of Michigan is another indication that the local economy has been somewhat depressed.

## POVERTY

The percentage of people in Alger County living below the poverty level in 1989 was 14.5%. The poverty rate declined to 13.8% in

1993. For 1995, the U.S. Census Bureau estimated that about 12.3% of the population of Alger County was living below the poverty level — about 1,140 people. At the same time, the estimated poverty rate for the state of Michigan was 12.6%. The national average poverty rate was 13.8% in 1995. By 1999 the poverty rate for the U.S. declined to 12.4%; Michigan's rate was 10.5%, and Alger County's proportion of people living in poverty was 10.3% — or 917 people. In terms of poverty, Alger County has been relatively better than the state or nation.

Growth in earnings and employment has helped to keep the poverty rate down in Alger County. Unfortunately, the wages have been relatively low, contributing to the relatively low personal per capita income.

**TABLE 9: THE TOURISM INDUSTRY IN ALGER COUNTY, 1996**

Type of Establishment	Number of Firms	Employment	Payroll
Eating and drinking places	40	303	\$2,144,000
Hotels and other lodging places	17	135	\$ 787,000
Amusement and recreation	5	<19	D

SOURCE: Central Upper Peninsula Planning and Development Regional Commission, 1999 (from County Business Patterns, 1996 Michigan State University)

D = not disclosed

## TOURISM

The tourist industry plays a prominent role in the local economy. In 1996, 62 firms associated with tourism in Alger County employed more than 440 persons and provided a payroll in excess of \$2.9 million (table 9). Assuming employment in these firms remained stable into 1997, then tourism would have accounted for more than 10% of the county's total employment.

Total annual expenditures attributable to the national lakeshore's designation were estimated at \$6.41 million (Figlio 1992). Also, this figure represents only direct expenditures; indirect and induced expenditures (multiplier effects) were not included. Assuming the same spending patterns and accounting for inflation would place this amount of tourist expenditures at \$7.61 million in 1999 dollars.

From May to October many visitors to the national lakeshore choose to ride the privately operated tour boats to get a close-up view of

the Pictured Rocks from Lake Superior. The tour leaves from Munising, goes by the Grand Island lighthouse, and then proceeds along the national lakeshore to Chapel Beach and returns. The tour boat is usually within the 0.25-mile of the national lakeshore boundary that extends on the surface waters of Lake Superior. The tour boat operation provides seasonal employment for residents of the area.

A 2001 visitor survey (Simmons and Gramann, 2002) asked visitor groups to list the amount of money they spent both inside the national lakeshore and within 60 miles of the national lakeshore on the visit for which they were surveyed. Twenty-seven percent of visitor groups spent \$351 or more and 16% of visitor groups spent between \$101 and \$150. Four percent of visitor groups spent no money. Of the total expenditures by groups, 31% was for lodging, 18% was for restaurants and bars, and 12% was for groceries and take out food.

## VISITOR USE AND EXPERIENCE

### OPPORTUNITIES FOR RECREATIONAL ACTIVITIES

#### Visitation

Recent visitor use at the national lakeshore is displayed in table 10. Visitor use statistics at the national lakeshore have been reported for many years. However the national lakeshore’s counting and reporting instructions changed in 1995 to comply with updated NPS standards. Therefore this recent data cannot be accurately compared to previous years’ reported visitor use. Before 1995 the data showed a general upward trend in visitor use. The data since 1995 shows visitation as being relatively steady. It is expected that visitation to the national lakeshore in the next couple of years would remain about the same, plus or minus 5%.

Visitation begins to increase in spring, peaks in July and August, and decreases substantially beginning in October. Typically, visitors during the peak months (July and August) represent around 40% of the total annual visits.

A survey of visitors to Pictured Rocks National Lakeshore was conducted in 1990, the results of which were compiled and

published in a study entitled “Social Impact Assessment, Beaver Basin Rim Road” (Pitt, Lime, and Vlaming 1991).

For the 1990 study purposes, visitors were divided into three separate study groups and were analyzed independently:

- backpackers — camped at least one night in the backcountry
- day hikers — did not backpack but did take day hikes
- nonhikers — may have walked on the beach but did not take even short day hikes

Pictured Rocks was the primary destination for many visitors (70% of backpackers, 31% of day hikers, and 18% of nonhikers). Most of the rest listed the national lakeshore as one of several other trip destinations. Only about 10% of the visits were spontaneous; the rest had planned their trip in advance.

Most visitors currently visit the east-central portion of the national lakeshore (i.e., Twelvemile Beach) via the unpaved county road H-58. This means that about 70% of the total national lakeshore visitors use at least part of the unimproved section of H-58. Based

**TABLE 10: PICTURED ROCKS NATIONAL LAKESHORE VISITATION, 1995–2002**

Year	Total Visits	Number of Visits in July and August	July-August Visits as Percentage of Annual Visits
1995	462,687	204,240	44%
1996	403,684	171,452	42%
1997	413,963	185,252	45%
1998	455,120	178,762	39%
1999	442,916	166,931	38%
2000	422,683	171,295	41%
2001	421,312	188,654	45%
2002	421,2209	171,819	40%

on the survey, nonbackpackers visit the east-central and Grand Sable areas more frequently than they visit the much more modern sites on the western end of the national lakeshore.

The Pictured Rocks National Lakeshore Visitor Study was conducted in the summer 2001 and reported in January 2002. Some interesting visitor use statistics were noted:

- Thirty-six percent of visitor groups were groups of two: thirty-six were in groups of three to five. Sixty-seven percent of visitor groups were family groups. Forty-six percent of visitors were age 31-55; 26% were age 15 years or younger.
- Eighty-five percent of visitor groups had visited only one in the past 12 months. More than half (54%) of visitor groups had visited one to four times in the past two to five years.
- Three percent of all visitors were international: 41% from Germany, 22% from Canada, 9% from France, and 7% from other countries. United States visitors were from Michigan (60%), Illinois (8%), Wisconsin (8%), and 35 other states.
- Forty-seven percent of visitors spent less than 24 hours at the national lakeshore. Twenty-eight percent of visitor groups spent one or two days, and 11% spent three days at the national lakeshore.
- Sixty-one percent of visitor groups visited the national lakeshore as one of several destinations, 30% as their primary destination, and 9% had not planned on visiting.
- The Miners Area (59%), Munising Falls (47%), and the Visitor Information Center (42%) were the most visited sites by visitor groups. The least visited site was the Grand Marais Maritime Museum (12%).
- The most common activities of visitor groups were sightseeing (78%), beach activities (67%), day hiking (66%), and enjoying solitude/quiet (65%).

### Overnight Use

Most visitors (100% of backpackers, 85% of day hikers, and 60% of nonhikers) spent at least one night in or near the national lakeshore. Visitors who did not spend the night averaged almost six hours in the area.

### Drive-In Camping

The season for the drive-in campgrounds is May through October. Campsites for visitors with disabilities, designated with the blue universal symbol of accessibility, are provided at each campground. Other public campgrounds are in the Hiawatha National Forest and Lake Superior State Forest.

Little Beaver Lake campground is 20 miles east of Munising off County Road H-58. Little Beaver has eight campsites on a beautiful inland lake. Little Beaver Lake features a 1-mile self-guiding interpretive trail and a 1.5-mile trail leading out to Lake Superior beaches and cliffs. There is access via a trail network that connects with the North Country National Scenic Trail, which traverses the national lakeshore for 42.8 miles between Munising and Grand Marais.

Twelvemile Beach campground is 12 miles west of Grand Marais off county road H-58. The campground's 36 sites are in two loops on a sandy bluff above Lake Superior's Twelvemile Beach. Twelvemile Beach also features a 2-mile self-guided interpretive trail.

Hurricane River campground is off County Road H-58, about 3 miles east of Twelvemile Beach campground where the Hurricane River cascades into Lake Superior. Eleven campsites are available in the lower campground loop and 10 in the upper loop. A level 1.5-mile walk on the North Country National Scenic Trail east from the lower campground leads past shipwreck remnants to the historic Au Sable Light Station.

### Backcountry Camping

Thirteen hike-in backcountry campgrounds are available throughout the national lakeshore. Campgrounds are in diverse sites: atop rugged cliffs, on inland lakes, at river mouths, and near sandy Lake Superior beaches. Campgrounds are spaced 2-5 miles apart and have 3-10 sites each. Camping is restricted to the designated backcountry campgrounds.

Table 11 shows overnight use of the national lakeshore. This is based on actual use levels recorded by the national lakeshore. Many national lakeshore visitors use campgrounds, motels, and other types of lodging that are outside the national lakeshore.

### Principal Visitor Opportunities

Visiting Pictured Rocks is not a passive activity. Very few people remain in their vehicle for their entire visit. At least 75% of each visitor study group walked along the shore or beach, went sightseeing, and took photographs. Day hikers outnumber nonhikers by more than four to one. Limited fishing also occurs. Within the national lakeshore are many two-track roads. Although primarily constructed for logging purposes, most of these roads are open to the public. The little use that occurs on these roads is primarily by hunters and local residents. Some hunting, primarily of black bear, occurs within the national lakeshore.

Common visitor activities at the national lakeshore are camping, beachcombing, hiking, and scenic driving. Most scenic driving occurs on County Road H-58. Although there is no officially designated wilderness in the national lakeshore, many visitors enjoy a wilderness experience in the lakeshore's backcountry because much of the national lakeshore is reachable only by foot or by water.

Scenic driving is another popular recreational activity at Pictured Rocks. Several people commented (in response to the preliminary draft alternatives) that gravel roads and primitive driving opportunities are slowly vanishing in the Upper Peninsula and that the diversity of opportunities should be maintained. Visitor surveys indicate that most visitors consider driving unpaved roads to be an important element of an enjoyable Pictured Rocks experience (Pitt, Lime, and Vlaming 1991). Unpaved and primitive roads compel drivers to slow down and allow people to experience their surroundings in more detail than if they were driving on a paved road designed for faster speeds.

### ACCESS TO PRIMARY NATIONAL LAKESHORE FEATURES

A Lake Superior vantage point is best for seeing the Pictured Rocks cliff formations, which extend along the shoreline for about 10 miles between Sand Point and Spray Falls.

TABLE 11: PICTURED ROCKS NATIONAL LAKESHORE CAMPING

Year	Tent Campers	RV Campers	Backcountry
1995	12,204	3,047	13,566
1996	11,536	3,195	11,647
1997	11,629	3,409	12,355
1998	13,053	3,968	13,346
1999	13,088	4,233	13,173
2000	13,121	3,618	13,849
2001	13,240	3,437	13,773
2002	12,865	3,912	15,952

The only other public access in the immediate area is Grand Island National Recreation Area, which requires access via boats. A ferry provides regular public service to the island.

Commercial motorboat tours to see the national lakeshore's pictured rocks run from Munising to Chapel Rock (about 17.5 miles northeast along the shoreline) and return. The motorboat tours provide about 37,000 people per year with cliff-viewing experiences. Commercial kayak tours are another way for people to see the cliffs (530 people in 2000). Kayak tours typically start at Miners Beach and go along the cliffs to the northeast for about 3 miles before returning.

### Visitor Information

**Pictured Rocks National Lakeshore/Hiawatha National Forest Service Visitor Information Center (Munising).** Visitors can obtain information at this center as well as at a variety of recreational resources in the national lakeshore. The center maintains schedules of interpretive activities presented by NPS and USFS rangers. The center, at the junction of State Highway M-28 and County Road H-58, features an attractive pictorial exhibit area and a Hiawatha Interpretive Association sales area where visitors can purchase posters, slides, and a variety of publications that foster greater understanding of the area.

**Munising Falls Interpretive Center.** Next to Munising Falls, the interpretive center features displays on the rich natural and cultural history of the national lakeshore. Exhibits on early iron smelting, geology, forest history, rare and endangered species, logging, and recreation portray the national lakeshore's diversity.

**Grand Marais Maritime Museum.** The 1930s Grand Marais Coast Guard Station has been adapted by the National Park Service for use as the Grand Marais Maritime Museum. It features exhibits on Lake Superior shipwrecks

and the lives and times of the U.S. Life Saving Service, a forerunner of the Coast Guard. The museum includes a small bookstore and is open as staffing permits.

**Grand Sable Visitor Center.** The Grand Sable visitor center is near the east end of the national lakeshore and the beginning of the Lakeshore – North Country National Scenic Trail. An NPS ranger assists hikers, backpackers, and nature enthusiasts with information to make their stay more enjoyable. There is also a bookstore.

### Sightseeing

Many attractions are accessible either by automobile or by short footpaths.

**Munising Falls.** Nestled in a cool and shaded valley, the 50-foot falls are at the end of a short hike on an improved trail. The trail is a good place to look for wildflowers in spring and early summer. Water from the creek once aided the production of iron at the Schoolcraft blast furnace, a story told on wayside exhibits and in the nearby interpretive center.

**Sand Point.** The Sand Point beach is a popular spot for walking in the evening to watch the sun go down over Munising Bay. The Sand Point Marsh Trail, a 0.5-mile interpretive trail (accessible to visitors with disabilities), also has a large print brochure for visually impaired visitors. NPS headquarters is on Sand Point.

**Miners Castle.** Beginning at the picnic area, a paved foot trail leads visitors past interpretive exhibits to breathtaking overlooks of Lake Superior and Grand Island. Erosion over long periods of time has created the interesting rock formations that give this place its name. About 65% of national lakeshore visitors go to the Miners area.

**Miners Beach.** A picnicker and beach walker's delight, Miners Beach extends for 1

mile along Lake Superior where waves roll in to polish beach cobbles.

**Miners Falls/River.** A gravel path through a deep woods environment leads to two overlooks. Miners River, plunging some 60 feet over a cliff, is home to brook and steelhead trout. A self-guiding interpretive trail guide is available at the trailhead. Miners River is popular for steelhead fishing in spring and fall.

**Chapel Falls, Lake, Beach.** After a brisk 1.5-mile walk past abundant stands of jewel weed, hikers can see the 90-foot Chapel Falls as it cascades toward Chapel Lake. About 1.5 miles later, hikers find Chapel Beach.

**Beaver Lakes and Beaver Basin.** Beaver Lakes provide small boating and fishing opportunities for visitors as they watch for bald eagle, osprey, and common loons.

**White Pine Trail.** At the Little Beaver Lake campground, this 1-mile self-guiding interpretive trail explores the plant and animal community of a cool, shady valley. Trail guides are at the trailhead.

**White Birch Trail.** With its trailhead at the Twelvemile Beach campground, this 2-mile self-guiding interpretive trail explores a variety of ancient Lake Nipissing beach and upland plant communities. Trail guides are at the trailhead.

**Twelvemile Beach.** This isolated beach is great for long walks and picking about the flotsam carried to shore by Lake Superior storms.

**Hurricane River.** The Hurricane River is frequented by early season fishing enthusiasts in search of steelhead trout.

**Au Sable Light Station.** The National Park Service is currently renovating this picturesque station. On a stormy day, one may get a sense of the history here and understand why this light station is preserved. Access to

the station is by a 1.5-mile trail beginning at the east end of the lower Hurricane River campground.

**Log Slide.** Legend has it that logs sent down the dry log chute would generate enough friction to cause the chute to catch fire. Today the chute is gone, but the lumberjack stories still linger as visitors gaze out over the Grand Sable Banks and dunes. This is a good place to see the Au Sable Light Station to the west and the Grand Sable Banks and Grand Marais to the east.

**Grand Sable Banks and Dunes.** The huge dunes were left by enormous retreating glaciers. Walking among the shifting sands with distant views of the lake is invigorating. About 60% of national lakeshore visitors go to the Grand Sable area.

**Grand Sable Lake.** Fishing and boating are favorite activities at Grand Sable Lake, which is at the foot of the Grand Sable Dunes. A picnic area and overlook on the north shore offer views of the landscape. Boat access is by a boat ramp on the south shore.

**Sable Falls.** A short hike from the parking lot leads to the falls and Sable Creek as it winds its way to Lake Superior. Another trail from the parking lot leads to the Grand Sable Dunes.

## Activities

**Commercial Tours.** One of the easiest ways to see the Pictured Rocks is to take one of the commercial boat tours on Lake Superior. The tours, which run on a daily basis from late May to early October, leave from the Munising city dock. Excursions allow spectacular lake views of famous lakeshore features — Grand Island, Miners Castle, Grand Portal Point, and Chapel Rock. Sea kayak guided tours are available in Munising, and the national lakeshore is a favorite destination for backpacking tours. In addition,

two air tour companies operate out of Munising and Grand Marais.

**Boating, Canoeing, and Sea Kayaking.** Beaver Lake, Little Beaver Lake, and Grand Sable Lake are favorites for small boats and canoes. Most rivers are too shallow for canoeing. Lake Superior can be rough and small craft are easily swamped. Munising and Grand Marais have launch ramps for motorboats. Backcountry permits are required for overnight sea kayakers and boaters. Boat motors are limited to a maximum of 10 hp on the Beaver Lakes and 50 hp on Grand Sable Lake.

**Hiking and Backpacking.** With numerous trails in the national lakeshore, visitors can choose short or long, easy or vigorous trails that provide spectacular vistas of the lake, cliffs, dunes, and waterfalls.

The North Country National Scenic Trail links outstanding scenic, natural, recreational, historic, and cultural areas in seven of the northern states. From the grandeur of the Adirondack Mountains in New York, it meanders westward through the hardwood forests of Pennsylvania, through the countryside of Ohio and southern Michigan, along the shores of the Great Lakes, and through the glacier-carved forests, lakes, and streams of northern Wisconsin and Minnesota. Its western terminus lies in the vast plains of North Dakota. In Pictured Rocks National Lakeshore, the 42.8-mile lakeshore trail along the rock bluffs and sandy shore of Lake Superior (between Munising and Grand Marais), which provides outstanding vistas as well as primitive camping and hiking experiences, is a component of the North Country National Scenic Trail

**Snowmobiling.** Snowmobiles are restricted to roads that are open to vehicles in the summer. Snowmobilers often pass through the national lakeshore as part of a larger loop tour.

**Hunting.** Hunting is a time-honored tradition in the national lakeshore. The habitat supports many harvestable species, such as bear, whitetail deer, snowshoe hare, grouse, ducks, and geese. Hunting closure areas have been designated for public safety reasons.

**Fishing.** Favorite catches include smallmouth bass, northern pike, walleye, brook and lake trout, whitefish, steelhead, and coho salmon. Ice fishing is popular on Munising Bay and most inland lakes.

## NOISE

The primary sources of noise include snowmobiles, chainsaws, air tours, motorboats, and the public address system on tour boats. Vehicles on national lakeshore roads generate some noise but do not present a major source of disturbance to visitors.

## SCENIC CHARACTER OF COUNTY ROAD H-58

County Road H-58, which is owned and maintained entirely by Alger County, is the primary artery for year-round access to the national lakeshore. The character of the road varies by location due to the nature of the roadbed, construction, and maintenance of the road. It was constructed primarily as a logging road, but use by national lakeshore visitors has grown since the establishment of the national lakeshore in the mid-1960s. Paved roads emanating from H-58 include Sand Point, Carmody (except the east-west portion), Miners Castle, and Monette roads; the Little Beaver Lake campground and Log Slide roads are improved gravel, and the Chapel and Beaver Basin overlook roads are unimproved gravel.

From Munising east to the Little Beaver campground road, H-58 is good quality asphalt pavement posted for travel at 55 mph. Straight sections interspersed with winding

curves characterize the drive on this portion. From Munising to H-15 numerous residences are seen, but they are interspersed with forested tracts. There is little residential development along much of this section of the road beyond the junction with H-15.

From Little Beaver campground road east to the Kingston Corner then north to the edge of the Kingston Plains, the road is a wide, improved gravel surface. Except for the open section through the Kingston Plains, this section is through a mature hardwood forest with a closed canopy. Fugitive dust is sometimes a problem for visitors during dry conditions. Appropriate speeds for vehicles traveling this section are 30-35 mph.

From the northern edge of the Kingston Plains to Log Slide, the road is a narrow, winding, primitive, sand and gravel road. The surface requires frequent grading to maintain a suitable driving surface. Depending on the maintenance schedule performed by the Alger County Road Commission crews, this section of the road can become like a washboard, with large potholes in the sand. Gravel fill has been added to many of these potholes during the past few years. Appropriate speeds for vehicles traveling this section are 25-30 mph. Most of the road is under a canopy of northern hardwoods, except for a clear-cut portion of Lake Superior State Forest near the national lakeshore's Twelvemile Beach campground. Residential development is limited to a few seasonal cabins in the section between Grand Sable Lake and Hurricane River.

From Log Slide to Grand Marais H-58 is asphalt similar in design standards to H-58 in the western portion of the national lakeshore.

Within the H-58 corridor, adverse impacts on visual quality are relatively few. Logging is a relatively minor problem, because visitors generally do not drive through logged areas. Housing is primarily limited to the section of H-58 between Grand Sable Lake and Hurricane River and west of Kingston Corner.

From visitor surveys, it is clear that most visitors see this road as a beneficial attribute to visual quality and to the visitor experience. County Road H-58 sets the stage for both Twelvemile Beach and Hurricane River campgrounds, which are small, quiet, informal, and intimate.

In general, visitors have expressed a preference for maintaining this road's relatively narrow, curvy character that compels passengers to drive slowly and experience their surroundings in an intimate, detailed way. Visitors especially value the way the road's narrow width allows the forest to close over the top in places, creating a canopy effect. Some people do not care about the road's scenery and would prefer a wider, faster route between Munising and Grand Marais. In the no-action alternative H-58 would probably be maintained as is, so scenic qualities that are valued by many visitors would be preserved.

## **OPPORTUNITIES FOR PEOPLE WITH DISABILITIES**

In general, roads and developments at the eastern and western ends of the national lakeshore are fairly modern. These new facilities provide excellent access for the elderly and the people with disabilities. However, there has been concern that access to the more primitive center of the national lakeshore is denied to these visitors. Almost 13% of nonhikers who did not visit the Twelvemile Beach area said they were prevented by a lack of physical ability. However, this perceived barrier is not related to the lack of modern development or access for visitors with disabilities. No spot in the national lakeshore is more modern or accessible than Munising Falls, yet 10% of the nonhikers say they did not have the physical abilities to visit this end of the national lakeshore.

The Pictured Rocks National Lakeshore/  
Hiawatha Forest Service Visitor Information

Center in Munising, the Munising Falls interpretive center, and the Grand Sable visitor center are all wheelchair accessible. Miners Castle overlook, Miners Beach and each of the drive-in campgrounds are also wheelchair accessible.

Outdoor lakeshore attractions that are accessible to visitors with disabilities include Munising Falls, the Sand Point marsh walk and beach, Miners Castle overlook, Miners

Beach, Little Beaver Lake campground, and Twelvemile Beach and Hurricane River campgrounds.

National lakeshore headquarters at Sand Point is not accessible to people in wheelchairs. The Sand Point Marsh Trail, a 0.5-mile interpretive trail, features a large print brochure for visually impaired visitors.

## NATIONAL LAKESHORE OPERATIONS AND FACILITIES

### OPERATIONS

Pictured Rocks National Lakeshore is administered by a superintendent with the assistance of five division chiefs. Because of the size of the national lakeshore, the operations are split between two districts – the east (Grand Marais) and west (Munising) districts. Most of the staff (27 full-time-equivalent positions) is stationed at national lakeshore headquarters in the former Sand Point Coast Guard Station in Munising. The Munising Range Light Station is being used for NPS administrative purposes. A small number of maintenance, visitor services, and law enforcement personnel are stationed at the east end of the national lakeshore at Grand Marais. Several seasonal employees and volunteers augment the permanent national lakeshore staff each summer. These seasonal positions include, for example, maintenance workers who paint historic buildings, park rangers who guide lighthouse tours, visitor use assistants in visitor centers, and aquatic and mammal researchers.

The management of the national lakeshore is organized into the following divisions:

**Administration.** This division provides coordination, guidance, and is responsible for the national lakeshore's budget, fiscal, and real property management activities. All contracting and purchasing for the national lakeshore is conducted through this division. They also have responsibility for housing management and overseeing fee collection operations in the national lakeshore.

**Interpretation and Cultural Resources.** This division is responsible for interpretive programming, education outreach, visitor center and cooperating association bookstores, and personal and nonpersonal services such as the park web site, publications, exhibits, and the volunteer in parks program management. The

Grand Sable Visitor Center, the Grand Marais Maritime Museum, and the Pictured Rocks/Hiawatha National Forest visitor information center in Munising and the Miners Castle information center northeast of Munising are maintained by this division. The division also maintains the museum collection, which includes several thousand artifacts. Artifacts in the collection include items that are related to the maritime use of the area, archeological sites, vegetation/natural resources, logging, and fishing.

**Visitor Services and Land Management.** This division is responsible for monitoring and documenting development on lands within the inland buffer zone and administering commercial licenses and special use permits. The division is also responsible for public and employee safety, law enforcement and criminal investigation, wildland fire preparedness, front- and backcountry management and patrol, and search and rescue.

**Maintenance.** This division is responsible for the operation and maintenance of all national lakeshore facilities and equipment including utilities (water, wastewater, power, and solid waste), administrative and historic structures and grounds, front- and backcountry visitor use areas, trail systems, campgrounds, picnic areas, roads, and national lakeshore signs and vehicles. The division is also engaged in an active sustainable environmental practices program.

**Science and Resource Management.** This division is responsible for the direction and coordination of social and natural science research, day-to-day resource management projects, NEPA compliance issues, and national lakeshore GIS data.

## FACILITIES

NPS-owned facilities serving visitors and supporting management operations are centered in the Munising area in the west district and in the Grand Marais area in the east district of the national lakeshore. Visitor service facilities include four information centers, an interpretive center, a museum, and wayside exhibits; the national lakeshore also shares a visitor information center with the Forest Service in Munising. The National Park Service manages roads to and trails at principal attractions at Munising Falls, Miners Castle and beach, and Sable Falls. Three drive-in campgrounds (67 sites) are in the central core of the national lakeshore, and a system of backcountry campgrounds (13) is in place throughout the national lakeshore. These campgrounds are connected by a system of trails (84 miles) including a segment of the North Country National Scenic Trail.

Principal vehicular access to and through the park to its facilities and attractions is provided by Alger H-58 (county owned) and spur roads owned by Alger County and the National Park Service (total of 38 miles of road, 8 miles paved). Former U.S. Coast Guard stations serve as the administrative headquarters for the national lakeshore — at Sand Point in the west district and at Grand Marais in the east district (including offices, a ranger station, seasonal dormitory, and a maritime museum). There are maintenance facilities in both districts, with a recently (1995) constructed facility in Munising.

The condition of the National Park Service facilities is generally good, although some have begun to deteriorate in the absence of adequate funds to provide routine maintenance and needed repairs.

## OPERATIONAL EFFICIENCY AND EMERGENCY RESPONSE TIME

The operational efficiency of the national lakeshore is not optimal. Except for the recently completed Munising maintenance facility, operations functions are housed in historic structures that are being adaptively used. The headquarters function is in the historic (former) Sand Point Coast Guard Station. Office and storage space is limited, utilities are substandard, and the building is not accessible to visitors with disabilities. The staff has increased and can no longer be accommodated at the Sand Point headquarters. A portion of the headquarters staff is being relocated from the Sand Point Coast Guard Station to the Munising Range Light Station in Munising until the new national lakeshore administration building is completed on County Road H-58. The separation of staff on the west end in three different locations (Sand Point, Munising, and the maintenance facility) is highly inefficient.

The east-end maintenance facilities are in a converted garage and construction trailer. The space is inadequate, it is not accessible to people with disabilities, and the utilities and conditions are substandard.

Emergency response time is good throughout the national lakeshore in areas served by paved portions of H-58. Because sand and gravel roads dictate slower speeds for safety reasons, the remainder of the national lakeshore has a somewhat slower emergency response time.

## ADMINISTRATIVE ACCESS TO MUSEUM COLLECTION

Standards for collection, preservation, management, and long-term care of national lakeshore museum collections are found in NPS-28 and the automated checklist program (ACP) within the automated national catalog system (ANCS). In fiscal year 97 (the national

lakeshore's baseline), there were 449 deficiencies, which were noted in the 1994 ACP. National lakeshore staff have been able to eliminate 43 deficiencies in fiscal years 1999 and 2000, however, limited display and

substandard storage areas for the national lakeshore's collections continue to limit convenient staff and researchers' access to the collection.



Chapter 4

.....  
**ENVIRONMENTAL  
CONSEQUENCES**





## INTRODUCTION

The National Environmental Policy Act (NEPA) requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided if a proposed action is implemented. In addition, the effects on historic properties are considered in accordance with the National Historic Preservation Act (NHPA). The following portion of this document analyzes the environmental impacts of the five alternatives on cultural resources, natural resources, the socioeconomic environment, the visitor experience, and national lakeshore operations. The analysis is the basis for comparing the beneficial and adverse effects of implementing the alternatives.

During the development of the alternatives, the planning team tracked the placement of each of the management prescriptions within the national lakeshore and documented the reason for selecting the particular management prescription. The desired visitor experience and resource condition from the management prescription was then compared to the existing condition. The changes needed to move from existing conditions toward desired conditions were then identified. These changes helped the planning team identify the impacts to be evaluated for each of the alternatives and helped evaluate the impacts of applying the management prescriptions.

Because of the general, conceptual nature of the actions described in the alternatives, the impacts of these actions can only be analyzed in general terms. Thus, this environmental impact statement should be considered a programmatic analysis. If and when specific developments or other actions are proposed subsequent to this *General Management Plan*, NPS staff will determine whether more detailed environmental and cultural

documentation is needed in accord with NEPA and NHPA requirements.

This chapter begins with a description of the methods and assumptions for each topic. Impact analysis discussions are organized by alternative and then by impact topic under each alternative. Each alternative discussion also details cumulative impacts and presents a conclusion.

The NPS National Environmental Policy Act guideline (Director's Order 12) presents an approach to identifying the duration (short or long term), type (adverse or beneficial) and intensity or magnitude (negligible, minor, moderate, or major) of the impact(s). That approach has been used in this document. Where duration is not noted in the impact analysis, it considered long term. Direct and indirect effects caused by an action were considered in the analysis. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther removed from the place, but are still reasonably foreseeable.

Mitigating actions would be taken during implementation of the alternatives. All impacts have been assessed assuming that mitigating measures have already been implemented.

There are plans by other organizations and agencies (see Appendix E: "Relationship to Other Planning Efforts") that could also affect the national lakeshore's natural and cultural resources as well as the socioeconomic conditions. The National Park Service is aware of these plans, and is working in coordination with these other efforts. If they exist, the cumulative impacts of NPS actions as well as actions by others are included in the impact analysis for each alternative.

## CUMULATIVE IMPACTS

A cumulative impact is described in the Council on Environmental Quality's regulation 1508.7 as follows:

*Cumulative impacts* are incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

To determine potential cumulative impacts, projects within the area surrounding Pictured Rocks National Lakeshore were identified. The area included Alger County, the northern portion of Schoolcraft County north of M-28, and nearby lands administered by the U.S. Fish and Wildlife Service, U.S. Forest Service, and the state. Information about projects was obtained by phone calls with county and town governments and federal land managers. Potential projects identified as cumulative actions included any planning or development activity that had been completed in the past, was currently being implemented, or would be implemented in the reasonably foreseeable future. Representatives of the U.S. Fish and Wildlife Service, U.S. Forest Service, and the state did not believe their activities would contribute to the cumulative impact scenario.

These actions are evaluated in conjunction with the impacts of each alternative to determine if they have any cumulative effects on a particular natural, cultural, visitor use, or social resource. Because most of these cumulative actions are in the early planning stages, the evaluation of cumulative impacts was based on a general description of the project.

## Past Actions

**Residential Development.** The construction of minimum and medium security prisons near Munising created 300 new jobs. This raised the demand somewhat for new home construction in an area that had previously been static or declining in population.

**Munising Marina.** The marina extended the L-dock 300 feet and added 112 slips to support local and transient boater needs. The only other marinas to support boater needs in this area are in Grand Marais and Marquette.

The L-dock was repaired, and 85,000 cubic yards of material was dredged inside the L-dock. This project was completed in summer 2001.

## Present Actions

**Residential Development.** Most of the current development is for seasonal dwellings. These are used as hunting base camps, and some are even winterized and used for rentals to snowmobilers. It is anticipated that even at the current rate of development, because of county and township zoning regulations, the rural character of the area will continue.

**Alger County Roads.** Alger County will pave H-58 from Log Slide east to Grand Sable Lake with funds available from the TEA-21 legislation (Transportation Equity Act for the 21st Century). All other roads in the county will remain at the existing level of service.

**Winter Use.** The tourist season used to be from June through September. Because of the large amount of snow from the lake effect (305 inches in the winter of 2000-2001) snowmobiling, and to a lesser extent dog sled racing, now draws tourists to the area in large numbers in December through March.

## Future Actions

**Munising Tourist Park.** Plans for the park include extending water lines to support the construction of a pavilion and additional campsites.

**Munising Infrastructure.** The city government is working to develop a comprehensive water and sewer system to support future city growth. A five-year plan has been prepared to direct the street and sidewalk program.

**Alger County Roads.** Long-range plans are to pave H-58 from Little Beaver Lake campground road east to the Log Slide road the entire length of the national lakeshore. The implementation of these plans is dependent upon funding. All other roads in the county will remain at the existing level of service.

## IMPAIRMENT OF NATIONAL LAKESHORE RESOURCES

In addition to determining the environmental consequences of implementing the preferred and other alternatives, NPS policy (*Interpreting the National Park Service Organic Act, National Park Service Management Policies*) requires analysis of potential effects to determine whether or not actions would impair site resources and values. An evaluation of impairment is not required for topics related to visitor use and experience, NPS operations, or the socioeconomic environment.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park/national lakeshore resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park/national lakeshore resources and values. However, the laws do give the National Park Service the management discretion to allow impacts on park/national lakeshore resources and values

when necessary and appropriate to fulfill the purposes of a the park/national lakeshore, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within a park/national lakeshore, that discretion is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of national lakeshore resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any national lakeshore resource or value may constitute an impairment. An impact would be more likely to constitute an impairment to the extent it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

Impairment may result from NPS activities in managing the national lakeshore, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the national lakeshore. A determination on impairment is made in the "Environmental Consequences" section in the conclusion section for each required impact topic related to the park's resources and values. When it is determined that an action(s) would have a moderate to major adverse effect, a justification for nonimpairment is made. Impacts of only negligible or minor intensity would by definition not result in impairment.

## METHODS AND ASSUMPTIONS FOR ANALYZING IMPACTS

This section presents the methods used to conduct the environmental impact analyses. Each resource topic area includes a discussion of the impact assessment and the intensity, duration, and type of impact. The intensity of the impact considers whether the impact would be negligible, minor, moderate, or major. The duration of the impact considers whether the impact would occur in the short term (temporary) or the long term (permanent). The type of impact considers whether the impact on the environment would be beneficial or adverse.

Pursuant to National Environmental Policy Act (NEPA) requirements, the impact analyses for the no-action alternative compare resource conditions in the year 2018 to existing conditions in 2003. The impact analysis for the action alternatives (the preferred alternative and alternatives A, C, and E) compare the action alternative in the year 2018 to the no-action alternative in the year 2018. Said differently, the impacts of the action alternatives describe the *difference between* implementing the no-action alternative and implementing the action alternative. To understand a complete “picture” of the impacts of implementing any of the action alternatives, the reader must also take into consideration the impacts that would occur under the no-action alternative.

### CULTURAL RESOURCES

#### Regulations and Policies

This impact analysis applies to five basic types of cultural resources: archeological sites, historic structures, cultural landscapes, ethnographic resources, and museum collections.

Section 106 of the National Historic Preservation Act requires a federal agency to take into account the effects of its undertakings on

properties included on, or determined eligible for inclusion on, the National Register of Historic Places and to provide the Advisory Council on Historic Preservation reasonable opportunity to comment. This also applies to properties not formally eligible but that are considered to meet eligibility criteria. All NPS planning and undertakings affecting historic properties are subject to the provisions of the 1995 programmatic agreement developed among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. Applicable legislation and regulations and specific management procedures regarding cultural resources are detailed in the National Park Service’s *Cultural Resource Management Guideline*, Director’s Order No. 28, Release No. 5, 1998.

The methods for assessing impacts on historic resources is based on the regulations of the Advisory Council on Historic Preservation (36 CFR 800) implementing Section 106. These methods include: (1) identifying areas that could be impacted; (2) comparing that location with that of resources listed, eligible, or potentially eligible for listing on the National Register; (3) identifying the extent and type of effects; (4) assessing those effects according to procedures established in the Advisory Council’s regulations; and (5) considering ways to avoid, reduce, or mitigate adverse effects as described in the “Mitigation” section in chapter 2.

Cultural resource impacts in this document are described in terms that are consistent with the regulations of the Council on Environmental Quality (CEQ), and in compliance with the requirements of both the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act.

## **Terms for Assessing the Impacts**

**Duration of Impact.** Impacts on historic properties (cultural resources) could be of short-term (one year or less), or long-term (more than one year). One year was selected for short term since renovations to historic structures usually take one year or less to complete. Anything beyond one year is considered long-term.

**Type of Impact.** The analysis section provides a detailed analysis of the type of impacts that would or could result from implementing the actions proposed in each alternative. The conclusion section summarizes the key points or results of the analysis.

When analyzed under the National Environmental Policy Act and the National Park Service's NEPA guideline (DO-12), an impact on historic properties (cultural resources) is either adverse or beneficial. This effect can be partially or completely mitigated, and the reduction in intensity from applying mitigation efforts is an estimate of the effectiveness of mitigation. The cultural resources portion of the environmental consequences section for each alternative includes an analysis and conclusion that uses NEPA terminology.

Additionally, under the National Historic Preservation Act (Section 106), an impact on historic properties is either adverse or not adverse. Adverse effects under Section 106 may also be partially or completely mitigated; however, unlike NEPA analysis, the effect cannot be reduced and remains an adverse effect. To comply with this difference in terminology for Section 106, an additional "Section 106 Summary" discussion has been added for each subheading under the impacts on cultural resources for each alternative. The required determination of effect for the undertaking (implementation of the alternative) is included in the "Section 106 Summary" sections for each alternative.

Effects under both the National Environmental Policy Act and the National Historic Preservation Act are considered adverse when they diminish the significant characteristics of a historic property.

**Intensity of Impact.** The intensity of an impact on a cultural resource can be defined as negligible, minor, moderate, or major. Negligible impacts would be barely perceptible changes in significant characteristics of a historic property. Minor impacts would be perceptible, noticeable, and localized and confined to a single element or significant characteristic of a historic property (such as a single archeological site containing low data potential within a larger archeological district or a single contributing element of a larger historic district). Moderate impacts would be perceptible, noticeable and would affect several elements or significant characteristics of a historic property. Major impacts would result in substantial and highly noticeable changes in significant characteristics of a historic property.

## **NATURAL RESOURCES**

### **Regulations and Policies**

The National Park Service is committed to minimizing wetland loss. The wetland protection mechanisms used by the National Park Service include Executive Order 11990, "Protection of Wetlands"; Director's Order 77-1, "Wetland Protection," and its accompanying Procedural Manual 77-1; Clean Water Act Section 404; and the "no net loss" goal outlined by the White House Office on Environmental Policy in 1993. Executive Order 11990 requires that leadership be provided by involved agencies to minimize the destruction, loss, or degradation of wetlands. NPS Director's Order 77-1 and Procedural Manual 77-1 provide specific procedure for carrying out the executive order.

### Species of Concern

The National Park Service consulted with the U.S. Fish and Wildlife Service (1999) and Michigan Department of Natural Resources to obtain the most recent list of species of concern, including threatened or endangered species at the federal and state levels. The Michigan Department of Natural Resources (1999) provided a list of occurrences for both federal and state species of concern. Recorded locations for identified species were compared with management or activities identified in each alternative to determine the likelihood of impact. As specific plans are developed, surveys may be required, and consultation with the U.S. Fish and Wildlife Service, or Michigan Department of Natural Resources, as appropriate, will be initiated.

The impact evaluation for wildlife species of concern for each alternative is based on the following: (1) the possibility of a species or its preferred habitat types occurring in areas expected to be affected; (2) the direct loss of habitat; (3) the partial loss of habitat from modification; and (4) the species' sensitivity to disturbance from human activities that may cause it to abandon currently occupied habitat or deter it from occupying suitable habitat.

Habitat fragmentation is also a critical factor for special-status species. Restored blocks of habitat should be large enough to support viable populations, and intact habitat should not be reduced or affected to the point that it would no longer support viable populations.

The assessment of potential impacts on species of concern is based on comparisons between the alternatives to the no-action alternative. Impacts have been evaluated considering species' sensitivity to impacts (based on rarity, resilience, size of population, and extent of species throughout the national lakeshore); location of species in proximity to disturbance; and mitigation applied as appropriate for the species and the site.

**Duration of Impact.** The expected duration of impacts is described as long term or short term. The duration of the impacts would depend to some degree on how easily impacts could be mitigated. Loss of a population of plants that could not be easily mitigated by reintroduction would be long term, while impacts that could be mitigated easily would be short term. Short term impacts would generally lead to recovery in three years or less; long-term impacts would take more than three years to attain recovery, if at all.

**Intensity of Impact.** The intensity and magnitude of impacts on species of concern have been described as negligible, minor, moderate, or major. Negligible impacts would be barely perceptible or detectable regardless of the size of the area affected. Minor impacts would affect a few individuals or have very local impacts on habitat and would not affect the viability of species. Moderate impacts would cause measurable effects on: a moderate number of individuals within a population, the dynamics among a number of species in a system, or a large area of habitat or important habitat attributes. Major impacts would lead to extirpating a local population or jeopardize the continued existence of a species.

**Type of Impact.** The type of impact refers to whether an impact is adverse or beneficial. Impacts were classified as adverse if they reduce the species' population or habitat size, continuity, or integrity. Conversely, impacts were classified as beneficial if they increase population or the size, continuity, or integrity of habitat.

### WILDERNESS RESOURCES AND VALUES

The National Park Service compared the management prescriptions for each alternative with the wilderness criteria identified in the Wilderness Act to determine how those values might be affected.

**Duration of Impact.** A short-term impact would last less than five years following the implementation of an alternative. A long-term impact would last longer than five years after implementing the alternative.

**Intensity of Impact.** The intensity and magnitude of impacts on wilderness values have been described as negligible, minor, moderate, or major. Negligible impacts would have no discernable effect on wilderness values. Minor impacts would be detectable and affect a limited area that meets wilderness criteria. Moderate impacts would be sufficient to cause a change in the wilderness resource values and they would be readily apparent. Major impacts would substantially alter the wilderness values, eliminating the characteristics that meet the criteria for consideration as wilderness.

**Type of Impact.** Impacts were classified as adverse if they would adversely affect wilderness values or integrity. Conversely, impacts were classified as beneficial if they would enhance wilderness values or integrity.

## **SOCIOECONOMIC RESOURCES**

The National Park Service applied logic, experience, professional expertise, and professional judgment to analyze the impacts on the social and economic situation resulting from each alternative. Economic data, historic visitor use data, expected future visitor use, and future developments of the national lakeshore were all considered in identifying, discussing, and evaluating expected impacts.

Assessments of potential socioeconomic impacts were based on comparisons between the no-action alternative and the four action alternatives.

**Duration of Impact.** The evaluation of impacts also included an assessment of duration. Distinguishing between short-term and long-term duration was necessary to under-

stand the extent of the identified effects. In general, short-term impacts are temporary and typically are transitional effects associated with implementation of an action (e.g., related to construction activities) and are less than one year. In contrast, long-term impacts have a permanent effect on the socioeconomic environments and their effect extends beyond one year (e.g., operational activities).

**Intensity of Impact.** The intensity of each impact was rated in terms of increasing severity, as negligible, minor, moderate, or major. Negligible impacts are effects considered barely detectable and are expected to have a barely discernible effect on the socioeconomic environment. Minor impacts are slightly detectable and are not expected to have an overall effect on the character of the socioeconomic environment. Moderate impacts are detectable, without question, and could have an appreciable effect on the social and economic environment. Major impacts are considered to have a substantial, highly noticeable influence on the socioeconomic environment and could be expected to alter that environment permanently. In addition, impacts are recognized as indeterminate if the intensity of their effects on the socioeconomic environment could not be readily identified.

**Type of Impact.** Impacts were recognized as beneficial if they would improve on characteristics of the socioeconomic environment as it relates to local communities, regional economies, and visitors. Conversely, impacts were considered adverse if they would degrade or otherwise adversely alter the characteristics of the environment in these areas.

## **VISITOR USE AND EXPERIENCE**

This impact analysis considers various aspects of visitor use and experience at Pictured Rocks, including opportunities for recreational activities, access to significant national lakeshore features, noise, the scenic character of County Road H-58, and opportunities for people with disabilities. The analysis is based

on how visitor use and experiences would change with the way management prescriptions were applied in the alternatives. The analysis is primarily qualitative rather than quantitative due to the conceptual nature of the alternatives.

Impacts on visitor use and experience were determined considering the best available information regarding visitor use and experience. Information on visitor use and visitor opinions was taken primarily from a survey of 863 visitors conducted in the summer of 1990 (Pitt, Lime, and Vlaming 1991). This information was supplemented by data gathered during this planning process, including opinions from Pictured Rocks visitors and neighbors and information provided by national lakeshore staff.

**Duration of Impact.** A short-term impact would last less than one year and would affect only one season's use by visitors. A long-term impact would last more than one year and would be more permanent in nature.

**Intensity of Impact.** Impacts were evaluated comparatively between alternatives, using the no-action alternative as a baseline:

- Negligible: the impact is at the lower levels of detection.
- Minor: the impact is slight, but detectable.
- Moderate: the impact is readily apparent.
- Major: the impact is severely adverse or exceptionally beneficial.

**Type of Impact.** Adverse impacts are those that most visitors would perceive as undesirable. Beneficial impacts are those that most visitors would perceive as desirable.

## NATIONAL LAKESHORE OPERATIONS AND FACILITIES

Impacts for each action alternative were evaluated by assessing changes to operations

that would be required to meet various operational requirements outlined in each of the action alternatives. These effects were compared to existing operations that are described in the no-action alternative.

The discussions of impacts are for those operations that would be new, undergo major operational change, or show susceptibility to increases or decreases in operational activity. For most daily and programmatic activities, the action alternatives would have negligible effects, i.e., there would not be a measurable change or difference in operations. These activities were generally not included in the analysis. For example, keeping a picnic area at the same size, serving the same types of user groups, and with the same types of facilities would have negligible effects on campground maintenance operations, and thus was not included in the analysis.

**Duration of Impact.** Short-term impacts would be less than one year since most construction is generally completed within a year's timeframe and would last only until all construction-related action items are completed. Long-term impacts would extend beyond one year and have a permanent effect on operations.

**Intensity of Impact.** With negligible impacts, there would not be a measurable difference in costs from existing levels. With minor impacts, measurable additions or reductions in cost would be less than 15% of existing levels. With moderate impacts, additions or reductions in cost would be between 15% and 30% of existing levels. With major impacts, additions or reductions in cost would exceed 30% of existing levels.

**Type of Impact.** Adverse impacts represent an increase in operating costs. Beneficial impacts represent a decrease in operating costs.

## IMPACTS OF THE NO-ACTION ALTERNATIVE

### IMPACTS ON CULTURAL RESOURCES

#### Archeological Sites

Under the no-action alternative, there would be no project or construction-related ground disturbance with the potential to impact known archeological resources.

**Cumulative Impacts.** An archeological site could possibly be disturbed/exposed/impacted by human activity (such as residential development, recreational activities, logging, or artifact hunting) or natural processes (such as erosion or vegetation loss). The possibility of ground disturbance and exposure would be most likely at readily accessible locations such as Miners Beach, Hurricane River, Grand Sable Lake, Little Beaver Lake, and several backcountry locations. The site would be protected to the extent possible, depending on staffing and funding levels. The loss would be mitigated by data recovery (salvage archeology), which would be done in consultation with the tribes and state historic preservation officer (see “Mitigation” section). The resulting impact on such sites would be anticipated to be adverse, long term, and minor (at a site with low data potential) to moderate (at a site with greater data potential). No past, present, or reasonably foreseeable future actions by the National Park Service under this alternative would be expected to combine with the impacts just described to result in cumulative impacts on archeological sites under the no-action alternative.

**Conclusion.** Under the no-action alternative, there would be no project or construction-related ground disturbance with the potential to impact known archeological resources.

There would be no impairment of archeological sites.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would not result in adverse effects on archeological sites.

#### Historic Structures

Continuing, as funding and staffing permit, the

- protection of the Schoolcraft Furnace site and kilns (a national-register listed property),
- preservation treatment and extensive rehabilitation of main building exteriors, renovation of main building interiors, and adaptive use at the Au Sable Light Station (as funding and staffing permit) of the Au Sable Light Station (a national-register listed property), and
- preservation treatment of the four properties determined eligible for listing (Sand Point and Grand Marais Coast Guard Stations, Munising Range Light Station, and Grand Marais Harbor of Refuge quarters)

would help protect their documented architectural values (in compliance with the *Secretary’s Standards for Historic Structures*). Preservation work could result in the loss of some historic fabric, a long-term minor adverse impact because the changes would be minimal. Overall, there would be a minor long-term beneficial impact on these historic structures because the preservation work (consistent with an ongoing historic preservation and maintenance program) and adaptive use would maintain the values that made these properties eligible for listing on the National Register of Historic Places and would ensure the maintenance and preservation of the buildings.

Continued seasonal guided tours at the Au Sable Light Station could result in some loss of historic fabric – a long-term negligible to minor adverse impact because the potential for damage is low. Continuing to lease the Grand Marais Harbor of Refuge keepers quarters to the Grand Marais Historical Society would result in continued preservation and maintenance of the building, a long-term, minor, beneficial impact.

**Cumulative Impacts.** No past, present, or reasonably foreseeable future actions by others under this alternative would be expected combine with the actions described above to result in cumulative impacts on archeological sites under the no-action alternative.

**Conclusion.** Actions under this alternative would generally have a minor long-term beneficial impact on the Schoolcraft Furnace site, the Au Sable Light Station, the Sand Point and Grand Marais Coast Guard Stations, and the Grand Marais Harbor of Refuge quarters, the Munising Range Light Station (national register and national register-eligible properties) because the preservation work (consistent with an ongoing historic preservation and maintenance program) and adaptive use would maintain the values that made these properties eligible for listing on the National Register of Historic Places and would ensure the maintenance and preservation of the buildings.

There would be no impairment of historic structures.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would not result in overall adverse effects on certain historic properties listed on or eligible for listing on the National Register of Historic Places.

## Cultural Landscapes

Without documentation and active management of cultural landscapes that might be determined eligible for listing on the national register (including those associated with the Au Sable Light Station, the Abrahamson and Becker Farms, the Sand Point and Grand Marais Coast Guard Stations, Munising Range Light Station, and the Grand Marais Harbor of Refuge quarters), these landscapes would not reflect their periods of significance, a minor long-term adverse impact because visitors can still see the resources and get a feel for what it must have been like during those periods.

Without active management, woody vegetation would encroach on abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, resulting in a more closed-in appearance and eventual change to a more wooded scene. This would result in the loss of landscapes associated with and farming or other agricultural activities. The potential loss of some of these remaining landscapes in the national lakeshore would have a minor long-term adverse impact on these cultural landscapes and relatively few would be left.

**Cumulative Impacts.** No past, present, or reasonably foreseeable future actions by others under this alternative would be expected combine with the actions described above to result in cumulative impacts on cultural landscapes under the no-action alternative.

**Conclusion.** There would be long-term minor adverse impacts on cultural landscapes associated with the Au Sable Light Station, the Abrahamson and Becker Farms, Sand Point and Grand Marais Coast Guard Stations, Munising Range Light Station, and Grand Marais Harbor of Refuge quarters because preservation work and adaptive use would maintain the structures’ values and ensure the

maintenance and preservation of the buildings.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, resulting in the eventual loss of landscapes associated with farming or other agricultural activities — a minor long-term adverse impact on these cultural landscapes, and relatively few would be left.

There would be no impairment of cultural landscapes.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would result in adverse effects on cultural landscapes associated with the Au Sable Light Station, Sand Point and Grand Marais Coast Guard Stations, and the Grand Marais Harbor of Refuge quarters as well as abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas.

### **Ethnographic Resources**

Under the no-action alternative, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would continue to be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from visitor-related activities such as motorboats and tour boats. These conflicts would constitute a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional. (Areas where impacts could occur include high cliffs or promontories, river and creek

mouths, inland lakes, Lake Superior, and the Grand Sable Dunes.)

**Cumulative Impacts.** No past, present, or reasonably foreseeable future actions by others under this alternative would be expected combine with the actions described above to result in cumulative impacts on ethnographic resources under the no-action alternative.

**Conclusion.** Under the no-action alternative, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources. However, American Indians would continue to be occasionally disrupted during religious activities, a minor, short-term, recurring adverse impact.

There would be no impairment of ethnographic resources.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would result in the continuation of adverse effects on ethnographic resources because American Indians desiring privacy for religious activities would continue to be occasionally disrupted by visitor-related activities/noise.

### **Museum Collection**

Under this alternative the museum collection would continue to be housed in substandard conditions at the Grand Marais Maritime Museum and Abrahamson barn. Thus, some items in the collection would continue to undergo slow deterioration, resulting in a long-term minor adverse impact on some objects. In addition to the substandard conditions, space to store and display the museum collection is inadequate and limits the staff’s and researchers’ abilities to protect, recover, exhibit, interpret, or study the

information contained in the collection. This results in a long-term moderate adverse impact on the accessibility of the collection to staff and researchers.

**Cumulative Impacts.** No past, present, or reasonably foreseeable future actions by others would be expected to combine with these actions and result in a cumulative impact on the museum collection under the no-action alternative.

**Conclusion.** The continuation of substandard storage and display conditions for the museum collection under this alternative would have a long-term minor adverse impact on some of the national lakeshore's museum collection. Limited access to the collection and lack of sufficient space to curate the collection would result in long-term moderate adverse impacts on staff and researchers.

There would be no impairment of the museum collection.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 "Assessment of Adverse Impacts"), the National Park Service finds that the selection of this alternative would result in adverse effects on some objects in the museum collection and on staff and researchers wanting access to the collection.

## IMPACTS ON NATURAL RESOURCES

### Species of Concern

The continuation of current use patterns, including motorized boats on the Beaver and Grand Sable Lakes, would likely have no discernable adverse effect on nesting bald eagles in those areas. This determination is based on the following observations: that the nests were established while boating has been occurring; the use of the lakes during the critical period is low; and the boat use (fishing) occurs outside the tertiary buffer

during critical periods (nesting, incubation, and brooding) (USFWS 1983). The nests are 0.25 mile or more away from these lakes, which is an acceptable distance to minimize the effect of human activity during nesting and fledging activity. Hiking occurs on a trail near one of the nests, but use during the critical periods is low, and the trail is outside the secondary buffer identified by the U.S. Fish and Wildlife Service (USFWS 1983).

Pitcher's thistle and other species of concern within the Grand Sable Dunes would continue to benefit from the area's management as a research natural area. The lack of development would discourage visitor use and would continue to provide a high degree of protection. The populations are stable and expected to remain so for the long term. Visitor use is very low, and no increase in visitor activity in the dunes would be expected. The benefit for Pitcher's thistle and other species of concern would be major and long term. Continued management of the Grand Sable Dunes as a research natural area would perpetuate the long-term major benefit for all species of concern within the area.

Continued use of two tracks (old logging roads) in the Beaver Basin would have a negligible impact on species of concern in the short or long term because the tracks do not traverse habitats where species of concern are found. Use of areas where species of concern are found would continue to be very low. As a result, negligible impacts on species of concern in the Beaver Basin would be expected, either short or long term.

Wolf use would follow current patterns, influenced by population size, climate, and food availability. Habitat conditions in the national lakeshore would be influenced by natural processes and cycles and would not be expected to change drastically over the long-term, providing a potential benefit for the gray wolf. Implementing the no-action alternative would have no known impact on the gray wolf.

**Cumulative Impacts.** Consultation with Michigan Department of Natural Resources, the U.S. Forest Service, the U.S. Fish and Wildlife Service, and ForestLand Group, Limited Liability Corporation indicate that all agencies and entities implement policies that offer consideration and protection to species of concern in accord with federal and state law regarding threatened, endangered, or other species of concern. Such policy provides a potentially major long-term benefit for species of concern in the inland buffer zone and Alger and Schoolcraft Counties (and the state).

In Michigan, threatened and endangered species are protected on both public and private land. The Endangered Species Protection law states that an individual may not harm or take threatened and endangered species (Michigan Natural Resources and Environmental Protection Act 1994, part 365). It is the responsibility of the landowner to submit projects for review to determine if a threatened or endangered species is known to occur or has potential to occur within the project scope. Logging on state land is conducted under these guidelines. ForestLand Group, Limited Liability Corporation, management practices address species of concern as identified by the Michigan Department of Natural Resources and the U.S. Fish and Wildlife Service. Such law provides a potentially major long-term benefit for species of concern in the inland buffer zone, and Alger and Schoolcraft Counties, (and the state).

Also, the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources conduct active management programs for the gray wolf in the Seney area, a major short- and long-term benefit for this species in the central Upper Peninsula.

Although the policies and laws mentioned above do not guarantee protection, they do serve as a deterrent to harming endangered species. In combination with federal laws that

protect endangered species, overall cumulative effect is that species of concern would continue to be protected in the national lakeshore, a major short- and long-term benefit.

**Conclusion.** Continuing current management practices would perpetuate short- and long-term beneficial impacts for species of concern. Preserving Grand Sable Dunes as a research natural area would continue to provide a major long-term benefit for species of concern in that area by providing an environment with very limited use or disturbance. There would be no discernable adverse impacts on the bald eagle, pitcher's thistle, the gray wolf, or other species of concern expected if the no-action alternative was implemented. Species occurring north of the inland buffer zone elsewhere in the lakeshore would continue to benefit from federal (NPS) protection. Species on state lands are afforded protection through review and management. Species on corporate and privately owned land are subject to state law and require review by the Michigan Department of Natural Resources to ensure protection. Although these laws and policies do not guarantee protection, they are an added incentive for protecting these species.

There would be no impairment of species of concern.

### **Wilderness Resources and Values**

Although there is no designated wilderness, wilderness values in Beaver and Chapel Basins would be preserved by continuing current management policy as set forth in the national lakeshore's "Backcountry Management Plan." Overall, continued management as backcountry would have a moderate beneficial effect on wilderness resources and values. The opportunity for solitude has been adversely affected to a moderate degree for the short term but recurring basis by noise from boats and logging. The effect of noise from the tour boat public address system is mitigable.

**Cumulative Impacts.** The U.S. Forest Service manages two wilderness areas in Hiawatha National Forest – Big Island 6,008 acres and Rock River Canyon 5,285 acres (11,293 acres total). No other wilderness areas are proposed for the area. There are no state wilderness areas nearby. The cumulative effect is that wilderness values have been protected on some federal land managed by the U.S. Forest Service. If current management of the Chapel and Beaver Basins (around 19,000 acres) continues at the national lakeshore, in combination with the existing wilderness areas nearby, there would be an overall long-term major beneficial cumulative impact on wilderness resources and values because these resources and values would be preserved. However, if current management of the Chapel and Beaver Basins did not continue at the national lakeshore, in combination with the existing wilderness areas nearby, there would be an overall long-term major adverse cumulative impact on wilderness resources and values because the wilderness values and resources in the national lakeshore would be degraded or lost.

**Conclusions:** Wilderness values would be maintained by managing the Beaver and Chapel Basins as primitive and natural. This is a moderate long-term benefit for wilderness values. Wilderness values could be adversely affected in the long term without the designation of wilderness — a moderate impact. The opportunity for solitude has been adversely affected to a moderate degree for the short term but recurring basis by noise from boats, the tour boat public address system, and logging. The effect of noise from tour boat public address system is mitigable. The total area of wilderness in the central Upper Peninsula would not increase.

Although the opportunity for solitude would continue to be adversely affected to a moderate degree, these impacts (from tour boats and logging) would occur intermittently and for short periods of time. Noise from the tour boats is mitigable with a different sound

system for the tour boats. There would be no major adverse impacts on resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the national lakeshore’s establishing legislation, (2) key to the natural or cultural integrity or opportunities for enjoyment of the national lakeshore, or (3) identified as a goal in this general management plan or other relevant NPS planning documents. Consequently, there would be no impairment of wilderness resources or values.

#### **IMPACTS ON SOCIOECONOMIC RESOURCES (LOCAL ECONOMY AND COUNTY TAX BASE)**

There would be no changes in management or operations of the national lakeshore, therefore, no new impacts would be expected, and current beneficial effects on the area economy would continue. The visitation to Pictured Rocks National Lakeshore has remained relatively constant over the past decade — in the low- to mid-400,000 range. The annual operating budget has grown modestly to generally keep up with inflation. There would be some benefits from expenditures of about \$21 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some short-term moderate benefits for some individuals and businesses involved with daily/annual operations. This would continue to be a long-term minor to moderate beneficial impact on the overall economy of Alger County.

There would be no major new construction projects or major improvements to facilities. The federal government would continue to pay PILT (Payment in lieu of taxes) payments to Alger County based upon a government-wide formula and the number of acres that were withdrawn from county tax rolls as the result of past federal acquisition.

**Cumulative Impacts.** There would be no perceptible change in the current continuing conditions expected, and no known actions in the past or in the reasonably foreseeable future by the National Park Service or by others that would result in minor cumulative impacts on the Alger County local economy and county tax base/ socioeconomic resources.

**Conclusions.** The long-term beneficial impacts of continuing existing management and operations would continue to be minor to moderate compared to the overall economy of Alger County. There would be some benefits from expenditures of about \$21 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some short-term moderate benefits for some individuals and businesses involved with national lakeshore daily/annual operations.

Alger County would continue to receive payment in lieu of taxes from the federal government for lands that have been previously acquired, a continuing long-term moderate beneficial impact.

## **IMPACTS ON VISITOR USE AND EXPERIENCE**

### **Opportunities for Recreational Activities**

There would be no new impacts of continuing existing opportunities for popular recreational activities (e.g., hiking, drive-in and backcountry camping, boating, hunting, fishing, kayaking, motorboat tours, skiing, snowmobiling, and ice climbing). There would be no new impacts from continuing use of motorboats on the Beaver Lakes and Grand Sable Lake (with restricted motor size), continuing commercial air tours, and continuing to allow backcountry camping at designated campgrounds.

The no-action alternative would maintain desirable opportunities for visitors to enjoy a

more primitive, slower, unpaved driving experience, assuming that the Alger County keeps County Road H-58 as it is, and by letting some two-track roads (used mostly by hunters and local residents) remain open. Thus, maintaining the existing diversity of recreational driving experiences would be a continuing long-term minor beneficial impact on the recreational driving opportunities at the national lakeshore. However, this would be a long-term adverse minor impact on visitors who prefer to have the road paved because the rough road surface and dust common to unpaved roads would continue.

**Cumulative Impacts.** There would be no perceptible change in the current continuing conditions expected, and no known actions in the past or in the reasonably foreseeable future by the National Park Service or by others that would result in cumulative impacts on providing opportunities for recreational activities.

**Conclusion.** Maintaining the existing diversity of recreational driving experiences would have a long-term minor beneficial impact on the recreational driving opportunities at the national lakeshore for those who prefer a more primitive, slower, unpaved driving experience. However, for those who prefer a less primitive paved experience, actions under this alternative would be a long-term minor adverse impact.

### **Access to Primary National Lakeshore Features**

Under the no-action alternative the current mix of access (some features easy to get to, some moderate, and some more challenging) would be maintained. Several primary national lakeshore features, including Munising Falls, Miners Castle Beach, Grand Sable Dunes, and Sable Falls, would continue to be easily accessible via paved road and a short walk. Access to Miners Beach and falls would be via short hikes from unpaved access

roads. Mosquito Beach, Chapel Beach, Twelvemile Beach, and Au Sable Light Station would be reached by unpaved road and a hike of more than a mile (unless approached by boat from Lake Superior).

In the no-action alternative, the continuation of motorized and nonmotorized boats approaching the cliffs and beaches on the Lake Superior shoreline would be a major long-term beneficial impact on people using the boats. The continuation of commercial motorboat tours (about 17.5 miles from Munising to Chapel Rock and back along the shoreline) would be a long-term moderate beneficial impact on visitors who want to see the Pictured Rocks from Lake Superior. The continuation of commercial kayak tours (typically about 3 miles from Miners Beach and back) would be a long-term beneficial minor impact for those visitors seeking a nonmotorized view of the pictured rocks from the water. Because the only other public access to similar lakeshore features in the immediate area is Grand Island National Recreation Area, which is accessible only via a ferry or privately owned watercraft, the impact of continuing the existing diversity of access offered in the national lakeshore would be a long-term moderate beneficial impact on visitor access.

**Cumulative Impacts.** There would be no perceptible change in the current continuing conditions expected, and no known actions in the past or in the reasonably foreseeable future by the National Park Service or by others that would result in cumulative impacts on visitor access to primary national lakeshore features.

**Conclusion.** The impact of continuing the existing diversity of access offered in the national lakeshore would be a long-term moderate beneficial impact on visitor access to primary features. Motorized and nonmotorized boats would continue to approach cliffs and beaches on the Lake

Superior shoreline, a long-term moderate benefit for visitors onboard the boats.

## Noise

Public comments received on the preliminary draft alternatives indicate that many visitors are seeking a quiet, nature-based experience when visiting the national lakeshore and man-made noise that carries over long distances is incompatible with that expectation. The primary sources of man-made noise in the national lakeshore, most of which are generated from outside the national lakeshore, are snowmobiles, motorized boats, personal watercraft outside the 0.25-mile boundary, the public address system on Lake Superior tour boats, and chainsaws from logging operations. Noise from these sources would continue to be readily apparent, which would result in recurring, short-term, moderate, adverse impacts on individual visitors and groups of visitors and the quiet, nature-based experiences they would likely be seeking.

Personal watercraft are permitted within the national lakeshore boundaries only from the western boundary to the east end of Miners Beach. Noise carries well over water, and it is anticipated that noise from personal watercraft within the permitted portion of the national lakeshore as well as outside the boundary would still be audible from the land.

Cars, trucks, and recreational vehicles generate some noise, which tends to be greater on gravel roads than on paved or sandy roads; however, in most areas the vegetation dampens and absorbs sounds sufficiently so that the adverse impact is short-term and negligible.

Sounds from vehicles on the road to Little Beaver Lake (especially sounds from towed trailers or campers) carry into Beaver Basin, causing a recurring, short-term, minor, adverse impact on visitors seeking a wilderness type experience in the Beaver Basin.

**Cumulative Impacts.** Noise outside of the national lakeshore is primarily from personal watercraft near the east and west ends of the national lakeshore, chainsaws associated with logging activities adjacent to the inland buffer zone, and snowmobiles in the winter along County Road H-58. These activities produce generally short-term, minor to moderate adverse impacts (depending on proximity to the noise source and setting). There are also occasional noise sources within the national lakeshore — the tour boat public address system, snowmobiles and vehicles on roads in the national lakeshore, and chainsaws used for logging in the inland buffer zone. These disruptions, in combination with the noise sources mentioned above that are outside the national lakeshore, would result in continuing adverse short-term minor to moderate (depending on proximity to the noise source and setting) cumulative impacts on the natural quiet of the national lakeshore.

**Conclusion.** Man-made noise from snowmobiles, motorized boats, personal watercraft outside the 0.25-mile boundary, the public address system on Lake Superior tour boats, and chainsaws from logging operations would continue to have a short-term moderate adverse impact on the visitor experience. (Because there are several sources of noise, which sometimes overlap, the intensity was determined to be moderate.) Sounds from vehicles on the road to Little Beaver Lake (especially sounds from towed trailers or campers) carrying into Beaver Basin would continue to cause a short-term minor adverse impact on visitors there because the noise disturbance is intermittent and of short duration.

### **Scenic Character of County Road H-58**

Maintaining the current conditions on H-58 — some portions paved with a wide vegetation clearance along the side of the road and other portions narrow, unpaved, and curvy with a canopy effect into the future — would be a long-term minor beneficial impact for those

visitors seeking a slow-speed scenic driving experience; it would also be a long-term minor adverse impact on those visitors looking for a faster, more direct route between Munising and Grand Marais.

**Cumulative Impacts.** There would be no perceptible change in the current continuing conditions expected, and no known actions in the past or the reasonably foreseeable future by the National Park Service or by others that would result in cumulative impacts on the scenic character of H-58.

**Conclusion.** Maintaining the current conditions on H-58 would be a long-term minor beneficial impact on those visitors seeking a slow-speed scenic driving experience and a long-term minor adverse impact on those visitors looking for a faster, more direct route between Munising and Grand Marais (an alternate paved route using Highways 77 and 28 already exists).

### **Opportunities for People with Disabilities**

Most visitor-oriented buildings in the national lakeshore are accessible to people with disabilities; exceptions include Au Sable Light Station, the Maritime Museum at Grand Marais, and the Sand Point boathouse. Although the exterior of these buildings can be seen from a boat or auto and interpretive pamphlets about them are available, their inaccessibility is a minor long-term adverse impact on disabled visitors because alternative forms of experiencing the historic structures are available. However, the lack of physical accessibility deprives them of the ability to see the resources first hand.

Some administrative facilities are accessible to people with disabilities, such as the Munising maintenance facility, but others, including the Sand Point headquarters building, the Grand Marais maintenance facility, and the Munising Range Light Station, are not. This inaccessibility means that some jobs at the national

lakeshore are not available to people with certain disabilities, and that other disabled persons are not able to conduct business at the lakeshore. The no-action alternative would maintain this moderate, long-term adverse impact on national lakeshore staff members and others who are disabled.

**Cumulative Impacts.** There would be no perceptible change in the current continuing conditions expected, and no known actions in the past or the reasonably foreseeable future by the National Park Service or by others that would result in cumulative impacts that would affect this population.

**Conclusion.** Although many outdoor attractions would continue to be available to persons with disabilities, and others that are interpreted through photographs and pamphlets, some important visitor-oriented and operations facilities (including lakeshore headquarters) would remain inaccessible. Thus, moderate long-term adverse effects on persons who are disabled would continue.

## IMPACTS ON NATIONAL LAKESHORE OPERATIONS AND FACILITIES

Continuing the inefficient operations at the former Coast Guard Station at Sand Point and the Munising Range Light Station, the west end of the national lakeshore would be a moderate long-term adverse impact on national lakeshore operations because it is too small to adequately accommodate staff, the utilities are substandard, it lacks accessibility, and it is 5 miles from the Munising maintenance facility.

Continued use of the converted farm buildings and residence at the east end of the national lakeshore would continue to be a long-term moderate adverse impact on national lakeshore operations because the buildings have inadequate space and are substandard in terms of utilities and

accessibility, and because staff time is required to drive between these buildings.

Emergency response times, because of slower sand-or dirt-based roads or gravel roads, would not change or improve under this alternative. This would continue to be a long-term moderate adverse impact in emergency situations when quick response times might be critical.

National lakeshore staff would continue to hike into Chapel Lake and Falls and use wheeled vehicles or boats (motorized vehicles) to conduct maintenance and resource management activities at the Beaver Lakes and along the Lake Superior shoreline. This motorized access is a long-term minor beneficial impact on operational efficiency because employees can quickly access an area and transport necessary maintenance equipment and supplies.

Transferring 7.5 acres at Grand Marais Coast Guard Station from the Coast Guard and the Army Corps of Engineers would consolidate and simplify management of this small parcel to one agency. This would be a long-term, minor, beneficial impact on national lakeshore operations in Grand Marais.

**Cumulative Impacts.** There would be no perceptible change in the current continuing conditions expected, and no known actions in the past or reasonably foreseeable future by the National Park Service or by others that would result in cumulative impacts that would affect national lakeshore operations and facilities.

**Conclusion.** Operations would continue to be inefficient with the dispersed facilities and limited space — a moderate long-term adverse impact. Emergency response times to some areas would continue to be slow — a long-term moderate adverse impact. The continuation of the existing motorized access for national lakeshore operations is a long-term minor beneficial impact on operational

efficiency by allowing employees to continue to quickly access an area and to transport necessary maintenance equipment and supplies.

### **UNAVOIDABLE ADVERSE IMPACTS**

The following discussion identifies impacts on resources associated with the implementation of this alternative. These impacts have been identified as being unavoidable, moderate to major, and adverse.

Some important visitor-oriented and operations facilities would remain inaccessible for people with disabilities. This would be a long-term, adverse, moderate impact on people with disabilities.

### **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The irretrievable and irreversible commitments of resources that are associated with this alternative are summarized below.

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term (e.g., the regrowth of an old-growth forest). Irretrievable commitments are those that are lost for a period of time (e.g., if a road is constructed, the vegetative productivity is lost for as long as the road remains).

There would be no irreversible and irretrievable commitments of resources under the no-action alternative.

### **RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY**

This section discusses the effects of the short-term use of resources in this alternative on the long-term productivity of the resources.

There would be no adverse effects on biological, agricultural, or economic productivity associated with implementing the no-action alternative.

## IMPACTS OF THE PREFERRED ALTERNATIVE

### IMPACTS ON CULTURAL RESOURCES

#### Archeological Sites

The construction operations associated with paving some portions of County Road H-58 and constructing the Miners River campground and the new east-end administrative/ maintenance facility could result in damage to existing archeological sites (if any) in the vicinity of the road right-of-way/proposed construction.

Before any ground-disturbing activities occurred, surveys would be done to identify the presence of archeological resources in the project area. When possible, identified sites would be avoided and protected to the extent possible, depending on staffing and funding levels. If avoidance was not possible, impacts would be mitigated by recovering site data, which would be done in accord with an archeological data recovery assessment developed in consultation with the state historic preservation officer (see “Mitigation” section). The resultant impacts on sites that could not be avoided would be anticipated to be long term, minor (for sites with low data recovery potential) to moderate (for sites with greater data recovery potential), and adverse.

**Cumulative Impacts.** An archeological site could possibly be disturbed/exposed/impacted by human activity (such as residential development, recreational activities, logging, or artifact hunting) or natural processes (such as erosion or vegetation loss). The possibility of ground disturbance and exposure would be most likely at readily accessible locations such as Miners Beach, Hurricane River, Grand Sable Lake, Little Beaver Lake, and several backcountry locations. The site would be protected to the extent possible, depending on staffing and funding levels. The loss would be mitigated by data recovery (salvage archeology), which would be done in consultation with tribes and the state historic preservation officer (see “Mitigation” section). The resulting impact on

such sites would be anticipated to be adverse, long term, and minor (at a site with low data potential) to moderate (at a site with greater data potential). These impacts, combined with the impacts of paving and constructing roads and constructing a campground and east-end facility would have a long-term minor to moderate adverse cumulative impact on archeological sites under the preferred alternative.

**Conclusion.** Should sites be identified during surveys of project areas, these site(s) would be protected to the extent possible, depending on staffing and funding levels. When possible, the site would be avoided; if avoidance was not possible, impacts would be mitigated by recovering site data. The overall impacts on sites that could not be avoided would be long-term, minor to moderate (depending on the data recovery potential of the site) adverse impacts.

There would be no impairment of archeological sites.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would result in adverse effects on archeological sites that were disturbed by paving or construction activities and could not be avoided.

#### Historic Structures

Preserving and rehabilitating the Munising Range Light Station; rehabilitating the Sand Point Coast Guard Station and boat house, and actively interpreting the site and moving some of the adaptive uses to other sites; doing preservation treatment on the ancillary buildings at the Au Sable Light Station; rehabilitating structures at and developing a site plan for the Grand Marais Coast Guard Station;

rehabilitating the Grand Marais Harbor of Refuge quarters; and rehabilitating the Abrahamson barn and preserving other structures at the Abrahamson farm would help protect the documented architectural values (in compliance with the *Secretary's Standards for Historic Structures*) of these structures. Historic buildings would be enhanced through rehabilitation of these resources as recommended in the historic structure reports/plans. Although some historic fabric might be lost during preservation/rehabilitation efforts, a minor long-term adverse impact (because changes would be minimal), overall there would be a long-term minor to moderate beneficial impact because the structures would be rehabilitated and documented architectural elements and values would be protected.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in the preferred alternative to have a cumulative impact on historic structures.

**Conclusion.** Actions under this alternative would have long-term minor to moderate beneficial impacts on the Munising Range Light Station, Au Sable Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, and the Abrahamson farm because the structures would be rehabilitated and preserved and documented architectural values would be preserved.

There would be no impairment of historic structures.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 "Assessment of Adverse Impacts") the National Park Service finds that the selection of this alternative would have an adverse impact from the loss of some historic fabric from the preservation/rehabilitation efforts (changes would be minimal). However, overall there would not be an adverse effect because the structures would be preserved from further deterioration and important

architectural elements and values would be protected.

### **Cultural Landscapes**

Restoring the cultural landscape at the Munising Range Light Station; restoring the cultural landscape at the Sand Point Coast Guard Station and boat house, actively interpreting the site; and moving some of the adaptive uses to other sites; restoring the cultural landscape at the Au Sable Light Station; restoring the cultural landscape and developing a site plan for the Grand Marais Coast Guard Station; restoring the cultural landscape at the Grand Marais Harbor of Refuge quarters; and restoring the cultural landscape at the Abrahamson and Becker Farms would be a long-term moderate beneficial impact on these important cultural landscapes. Significant elements of the historic scenes would be restored to a reasonable facsimile of their period of historical significance, documented values would be preserved, and noncontributing elements would be removed.

In areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, woody vegetation would encroach, resulting in a more closed-in appearance and eventual change to a more wooded scene. This would result in the loss of landscapes associated with farming or other agricultural activities. The potential loss of some of these remaining landscapes in the national lakeshore would have a minor long-term adverse impact on these cultural landscapes, and relatively few would be left.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in the preferred alternative to have a cumulative impact on cultural landscapes.

**Conclusion.** Restoring the cultural landscapes at the Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais

Harbor of Refuge quarters, and the Abrahamson and Becker Farms under this alternative would have long-term, moderate beneficial impacts on the cultural landscapes associated with these sites by preserving their documented values, removing noncontributing elements, and adding other elements reflective of a reasonable facsimile of the cultural landscape's period of significance.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, resulting in the eventual loss of landscapes associated with farming or other agricultural activities — a minor long-term adverse impact on these cultural landscapes — and relatively few would be left.

There would be no impairment of cultural landscapes.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would not have adverse effects on the cultural landscapes at Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson Farm.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads, resulting in the eventual loss of landscapes associated with farming or other agricultural activities — an adverse impact on these cultural landscapes, and relatively few would be left.

### **Ethnographic Resources**

Under the preferred action, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from visitor-related activities such as motorboats, and tour boats. These conflicts would constitute a minor, short-term, reoccurring, adverse impact, however, conflicts would only be occasional. (Areas where impacts could occur include high cliffs or promontories, river and creek mouths, inland lakes, Lake Superior, and the Grand Sable Dunes.)

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in the preferred alternative to have a cumulative impact on ethnographic resources.

**Conclusion.** Under the preferred alternative, there would be no project- or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from visitor-related activities such as motorboats, and tour boats. These conflicts would constitute a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional.

There would be no impairment of ethnographic resources.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would have recurring, occasional, adverse impacts on the ability of American Indians to collect resources for ceremonial and religious purposes or to conduct ceremonies.

## **Museum Collection**

Moving the museum collection to the proposed new administrative headquarters building near Munising would provide long-term major beneficial effects for the preservation the collection because the new repository would meet modern professional standards and would be more accessible to staff and researchers.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions described above (moving the collection to a repository that meets professional standards) to have a cumulative impact on the museum collection under the preferred alternative.

**Conclusion.** Actions under this alternative would have long-term major beneficial impacts on the preservation of and access to the national lakeshore's museum collection by staff and researchers because the collection would be housed in a new repository that would meet modern professional standards and would be more accessible to staff and researchers.

There would be no impairment of the museum collection.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 "Assessment of Adverse Impacts") the National Park Service finds that the selection of this alternative would not have an adverse effect on the museum collection.

## **IMPACTS ON NATURAL RESOURCES**

### **Species of Concern**

The elimination of motorized boats on Beaver and Little Beaver Lakes could reduce further the already low potential for disturbance of bald eagle nesting in these areas, but the benefit would be difficult to quantify. There would be no change at other nest sites in the lakeshore, and no adverse effect would be expected.

Because there would be no change in the management of Grand Sable Dunes, Pitcher's thistle and other species of concern found there would continue to benefit from the protection afforded by the designation and management of the area as a research natural area. All species of concern found in the dunes would remain protected and primarily subject to natural changes. It is unlikely that species of concern elsewhere in the lakeshore would be affected because management prescriptions and actions in this alternative would not lead to activities that would be detrimental to individual species of concern.

The development of the Miners campground would probably not adversely affect gray wolf use of the lakeshore. There has been evidence of wolf activity in the Miners area. The campground would be in an area with little development. Because the overall level of development in the lakeshore would remain very low, it is unlikely that this additional development would affect use of the national lakeshore by wolves. (USFWS 1992; MDNR 1997). There would be no appreciable increase in the density of roads, although road improvements, particularly paving of primary roads, could result in higher travel speeds. High speeds (about 60 miles per hour) could increase the potential for road fatalities if wolf use coincides with traffic use. The design for H-58 would incorporate elements to provide a design speed of about 35 miles per hour.

The abandonment of old logging roads in the Beaver Basin and other areas managed under the primitive prescription would have a negligible long-term effect on species of concern, adverse or beneficial, because these roads have not been available for vehicle use for many years.

**Cumulative Impacts.** In Michigan, endangered species protection applies to all private and public land. The Endangered Species Protection law states that an individual may not harm or take threatened and endangered species (Michigan Natural Resources and Environmental Protection Act 1994, part 365). It is the

responsibility of the landowner to submit projects, including logging, for review to determine if a threatened or endangered species is known to occur or has potential to occur within the project scope. ForestLand Group, Limited Liability Corporation, management practices address species of concern as identified by the Michigan Department of Natural Resources and the U.S. Fish and Wildlife Service. Species of concern would continue to be afforded protection in the inland buffer zone as well as in the shoreline zone. The net long-term cumulative effect would be negligible.

Also, the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources conduct active management programs for the gray wolf in the Seney area, a major short- and long-term benefit for this species in the central Upper Peninsula.

Although the policies and laws mentioned above do not guarantee protection, they do serve as more of a deterrent to harming endangered species than without these laws. In combination with federal laws that protect endangered species, overall cumulative effect is that species of concern would continue to be protected in the national lakeshore, a major short- and long-term benefit.

**Conclusion.** There would be negligible long-term effects on the bald eagle, pitcher's thistle, gray wolf, or other species of concern associated with implementing the preferred alternative. Species occurring within NPS-owned lands are managed to maintain or enhance beneficial conditions. Species inhabiting state lands are afforded protection through review and management. Species on privately owned land are subject to state law and require review by the Michigan Department of Natural Resources to ensure protection. Although these laws and policies do not guarantee protection, they are an added incentive for protecting these species.

There would be no impairment of species of concern.

## Wilderness Resources and Values

If Congress designated wilderness on 12,843 acres in the Beaver Basin, it would preserve the wilderness values of this area in perpetuity — a long-term moderate beneficial impact.

Most of Chapel Basin would be managed under the primitive prescription to preserve primitive values, a major long-term beneficial impact. The area around Chapel Lake would be managed to allow improved trail development — a minor long-term impact that would be reversible. The total area of wilderness in the central Upper Peninsula would increase by about 26%.

Opportunities for solitude and natural quiet would improve with the reduction of noise from the public address system used on tour boats between Miners Castle and Chapel Rock — a moderate, long-term, intermittent beneficial impact.

**Cumulative Impacts.** The addition of Beaver Basin as wilderness (12,843 acres) would increase the protection afforded by wilderness designation in the central Upper Peninsula to 49,286 acres (Big Island 6,008 acres, Strangmoor Bog 25,150 acres, and Rock River Canyon 5,285 acres), resulting in a moderate beneficial cumulative impact.

**Conclusion.** Wilderness values in the Beaver Basin would be preserved by wilderness designation (12,843 acres), a moderate long-term beneficial impact. Reducing the noise from tour boat public address system operations between Miners Castle and Chapel Rock would be a moderate long-term intermittent, beneficial impact on opportunities for solitude and natural quiet. Most of the Chapel Basin would be managed to preserve wilderness values, a major long-term beneficial impact. The area around Chapel Lake would be managed to allow improved trail development, a minor long-term adverse impact that is reversible. The total area of wilderness in the central Upper Peninsula would increase by about 26% — a long-term moderate beneficial impact for those who desire that kind of experience.

There would be no impairment of wilderness resources or values from actions proposed in this alternative.

### **IMPACTS ON SOCIOECONOMIC RESOURCES (LOCAL ECONOMY AND COUNTY TAX BASE)**

The preferred alternative proposes a range of development and restoration projects (construction of the Miners campground and trails and the east-end administration/maintenance facility; paving portions of H-58; and partial landscape restoration at the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, Au Sable Light Station, the Munising Range Light Station, and the Abrahamson Farm) to be accomplished over the life of this plan. There would be some benefits from expenditures of about \$50 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects. This economic activity would occur over time as various projects are phased in and others are completed. How much the Alger County economy actually benefits would depend upon the degree to which national lakeshore needs are fulfilled within and by the local businesses.

The national lakeshore would remain a part of the local socioeconomic environment. NPS expenditures for goods, services, and staff would continue to benefit the local economy. Visitors would still be attracted to the county because of the national lakeshore, and their spending patterns would continue to contribute to the area's economy. The actions proposed in the preferred alternative are expected to result in short-term beneficial impacts on income, earnings, and employment and unemployment.

**Cumulative Impacts.** Development projects within the national lakeshore in this alternative

combined with ongoing or reasonably foreseeable activities in the construction sector outside the national lakeshore (some new housing construction and proposed commercial development on the outskirts of Munising) would contribute short-term expenditures over the life of the plan that would have a minor beneficial cumulative impact primarily affecting the construction industry.

**Conclusion.** Overall, the long-term benefits would be moderate compared to the economy of Alger County. There would be some benefits from expenditures of about \$50 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative.

National lakeshore operations would be a continuing long-term, beneficial contribution to the local economy.

### **IMPACTS ON VISITOR USE AND EXPERIENCE**

#### **Opportunities for Recreational Activities**

In the preferred alternative, there would be some changes in recreational opportunities compared to the no-action alternative. Motorboats would no longer be allowed on Little Beaver and Beaver Lakes because the lakes would be managed under the primitive prescription — a long-term, moderate adverse impact on visitors who desire this kind of experience at the Beaver Lakes, and a long-term minor beneficial impact on visitors who find motorboat noise undesirable.

From Spray Falls to the mouth of Sevenmile Creek, the 0.25-mile strip of Lake Superior within the national lakeshore would be managed under the primitive prescription, so motorized boats would no longer be permitted

— a long-term minor adverse impact on visitors who desire this kind of experience in this area and a long-term moderate beneficial impact on visitors who find motorboat noise undesirable.

A new drive-in campground and trails at the Miners area would expand camping and hiking opportunities in the national lakeshore. However, hikers in the Miners area might encounter more hikers than in the no-action alternative, a minor long-term adverse impact. Restoration/ preservation measures and other improvements at the Munising Range Light Station, Sand Point and Grand Marais Coast Guard Stations, Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and Abrahamson Farm would improve opportunities for touring and learning about historic resources. Improvements at the Grand Marais Coast Guard Station would provide additional opportunities for day use activities. Together these additional or improved recreational opportunities would have a moderate beneficial impact on the visitor experience.

If the county converts sections of County Road H-58 to improved gravel or pavement, changes would occur in the road's character, even though efforts would be made to maintain characteristics that visitors say contribute to the road's scenic character — narrow and slow speed with forest canopy. Some stretches of H-58 would likely be wider, more vehicles would probably be encountered, vehicle speeds would probably increase, the forest canopy over the road would be eliminated in places, and opportunities for a primitive driving experience leading to primary national lakeshore features would likely be reduced. This reduction would be a moderate adverse impact on visitors over the long term.

Closing two-track roads in Beaver Basin and other areas managed as primitive would have a minor long-term adverse impact on visitor experiences because there are few two-track roads and they are not maintained.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others

would, in combination with the impacts just described, result in cumulative impacts on opportunities for recreational experiences under this alternative.

**Conclusion.** Impacts on opportunities for recreational activities would be long term and mixed. Reduced motorboating opportunities on the Beaver Lakes and in the 0.25 mile strip of Lake Superior between Spray Falls and the mouth of Sevenmile Creek would have a long-term minor adverse impact on visitors who desire this kind of experience in this area and a long-term moderate beneficial impact on visitors who find motorboat noise undesirable. Additional or improved recreational opportunities (hiking, camping, and touring historic resources) would provide a long-term moderate beneficial impact. Opportunities for primitive driving experiences would be eliminated, a long-term moderate adverse impact.

#### **Access to Primary National Lakeshore Features**

Somewhat easier access would be provided to many primary national lakeshore features (e.g., Little Beaver Lake, Beaver Basin overlook and Log Slide) if the county makes recommended improvements to County Road H-58. Improvements to existing access roads (e.g., Miners Falls and Log Slide Roads) would also contribute to this effect. As a result, visitors would be able to visit more lakeshore features in a given length of time, a moderate long-term beneficial impact. On the other hand, as a result of improved access, certain areas might get more visitors and could be crowded at times, a minor long-term adverse impact.

Placing the 8-mile stretch of shoreline, including a portion of Twelvemile Beach, in the primitive prescription would make this area off-limits to motorcraft except in an emergency or when human safety was threatened, a moderate long-term adverse impact on the visitor experience for those who desire to have this kind of experience in this area and a moderate long-term beneficial impact on those who find

motorboat noise undesirable. Commercial motorboat tours and kayak tours would not be affected. Motorized and nonmotorized boats would continue to approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on access to primary national lakeshore features under this alternative.

**Conclusion.** Impacts on access to primary national lakeshore features would be long-term and mixed. Visitors would be able to visit more lakeshore features in a given length of time, a moderate beneficial impact. Due to improved access, certain areas might be crowded at times, a minor adverse impact. Loss of access to a portion of Twelvemile Beach via motorized boats would have a long-term moderate adverse impact for some visitors and a moderate beneficial impact on other visitors. Motorized and nonmotorized boats would continue to approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.

## Noise

Noise from snowmobiles, motorboats, and chainsaws would have a long-term, moderate adverse impact on the visitor experience in much of the national lakeshore unless ways to reduce or muffle the sounds were implemented. Because of modifications to the tour boat public address system, noise would be reduced from the west boundary to Chapel Beach — a moderate, long-term, beneficial, intermittent impact. Boat noise would be reduced along 18 miles (from Miners Beach to the mouth of Sevenmile Creek) of the shoreline and adjacent areas, resulting in a minor long-term beneficial impact on the visitor experience, with users of shoreline and beach areas benefiting most. Motorboat noise would be eliminated on the Beaver Lakes (managed as the primitive

prescription). Compared to the no-action alternative these changes would have a long-term minor beneficial impact on visitors who find such noise undesirable because the current 10-horsepower restriction produces only low noise levels.

Reducing the noise from the public address system on the tour boats would have a moderate, long-term, intermittent beneficial impact on the visitor experience for visitors who find such noise undesirable.

Sounds from vehicles on the road to Little Beaver Lake (especially sounds from towed trailers or campers) carry into Beaver Basin, causing a recurring, short-term, minor, adverse impact on visitors seeking a wilderness type experience in the Beaver Basin.

**Cumulative Impacts.** Noise outside of the national lakeshore is primarily from personal watercraft and commercial boat tours outside the 0.25-mile boundary near the east and west ends of the national lakeshore, chainsaws associated with logging activities adjacent to the inland buffer zone, and snowmobiles in the winter along County Road H-58. These activities produce generally short-term, minor to moderate adverse impacts (depending on proximity to the noise source and setting). There would also be occasional noise sources within the national lakeshore — snowmobiles and vehicles on roads in the national lakeshore, and chainsaws used for logging in the inland buffer zone. These disruptions, in combination with the noise sources mentioned above that are outside the national lakeshore, would result in continuing adverse short-term minor to moderate (depending on proximity to the noise source and setting) cumulative impacts on the natural quiet of the national lakeshore. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact.

**Conclusion.** The preferred alternative would have a moderate, long-term, intermittent beneficial impact related to reducing noise from the tour boat public address system from the

west boundary to Chapel Beach. Boat noise would be reduced along 18 miles (from Miners Beach to the mouth of Sevenmile Creek) of the shoreline and adjacent areas, resulting in a minor long-term beneficial impact on the visitor experience. Sounds from vehicles on the road to Little Beaver Lake would cause a recurring, short-term, minor, adverse impact on visitors seeking a wilderness-type experience in the Beaver Basin.

### Scenic Character of County Road H-58

Some loss of the characteristics that many visitors say contribute to H-58's scenic character (narrow width, curves, and forest canopy) would occur if the county makes the recommended improvements (paving and improved gravel) to this road. This would result in a moderate long-term adverse impact on the visitor experience.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on the scenic character of County Road H-58 under this alternative.

**Conclusion.** If recommended changes to County Road H-58 were made, these changes would have a moderate, long-term adverse impact on the road's scenic character.

### Opportunities for People with Disabilities

A new campground at Miners would be accessible to people with disabilities, providing additional options for campers who are not able to use backcountry campgrounds. The Grand Marais Coast Guard Station would provide a new day use area that is accessible to visitors with disabilities. Compared to the no-action alternative, these measures would have a minor long-term beneficial impact on disabled visitors because there would not be much change from existing accessible opportunities.

Most visitor-oriented buildings in the national lakeshore are accessible to people with disabilities; exceptions include Au Sable Light Station, the Maritime Museum at Grand Marais, and the Sand Point boathouse. Although the exterior of these buildings can be seen from a boat or auto and interpretive pamphlets about them are available, their inaccessibility is a minor long-term adverse impact on visitors with disabilities because alternative forms of experiencing the historic structures are available. However, the lack of physical accessibility deprives them of the ability to see the resources first hand.

Moving the headquarters function from Sand Point to a new administration building (accessible to visitors with disabilities) near the Munising maintenance facility and consolidating administrative and maintenance functions in a new facility near Grand Marais (also accessible to visitors with disabilities) would have a major beneficial impact on disabled lakeshore staff and other disabled persons needing to conduct business in the national lakeshore because the current headquarters is not accessible to people with disabilities.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on people with disabilities.

**Conclusion.** Providing a new campground at Miners, and a new day use area at the Grand Marais Coast Guard Station (accessible to visitors with disabilities) might make it easier for disabled visitors to get to, see, or use additional national lakeshore features. These actions would have minor long-term beneficial impacts on visitors with disabilities.

Moving the headquarters function to a new administration building (accessible to visitors with disabilities) near Munising and consolidating administrative and maintenance in a new facility near Grand Marais (also accessible to visitors with disabilities) would have a major long-term beneficial impact on

staff and others with disabilities who might need to conduct business in the national lakeshore.

## **IMPACTS ON NATIONAL LAKESHORE OPERATIONS**

Consolidating national lakeshore operations at both ends of the national lakeshore in new facilities that meet NPS standards would improve operational efficiency, providing a long-term moderate benefit. Moving the headquarters office from Sand Point to a new administration building near the Munising maintenance facility would not impact soils because the underground area has already been readied for the construction of the new building.

Leasing the Munising Range Light Station for needed staff space would be an asset to the staff and a minor short-term beneficial impact on lakeshore operations.

Improvements to H-58, if made by the county, would result in a minor long-term decrease in emergency response times in the central and eastern portions of the lakeshore. However, impacts would be minor because the road would remain a slow-speed road by design.

Precluding national lakeshore staff use of motorboats in national lakeshore waters adjacent to the proposed Beaver Basin wilderness and Twelvemile Beach shoreline, except in emergencies, would have a short-term recurring minor adverse impact on national lakeshore operations because little administrative use of motorboats in this area occurs now. (Administrative access to Little Beaver Lake, which is by car or truck, and to Chapel Lake and Falls, which is by foot, would not change.)

Developing a new drive-in campground would have a minor long-term adverse impact on enforcement staff who would have another site to patrol and maintenance staff would have an

additional campground to operate and maintain.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on national lakeshore operations.

**Conclusion.** Implementing the preferred alternative would have a moderate long-term benefit on national lakeshore operations from consolidating operations in new facilities at both ends of the national lakeshore.

Improvements to H-58, if made by the county, would result in a minor long-term decrease in emergency response times in the central and eastern portions of the lakeshore.

Precluding staff use of motorboats in national lakeshore waters adjacent to the proposed Beaver Basin wilderness and Twelvemile Beach shoreline, except in emergencies, would have a short-term recurring minor adverse impact on national lakeshore operations. (Administrative access to Little Beaver Lake, which is by car or truck, and to Chapel Lake and Falls, which is by foot, would not change.)

## **UNAVOIDABLE ADVERSE IMPACTS**

The following discussion identifies impacts on resources associated with the implementation of this alternative. These impacts have been identified as being unavoidable, moderate to major, and adverse.

Some archeological sites adjacent to construction would be subject to disturbance.

Restricting motorboating and closing primitive roads would reduce opportunities for these types of experiences in the Beaver Basin.

Managing the offshore waters adjacent to wilderness as primitive would eliminate access to a portion of Twelvemile Beach by motorboat

and would adversely affect a small number of visitors and national lakeshore staff.

Improvements to County Road H-58 in the national lakeshore would change its scenic quality from a primitive road to a rural highway experience between Grand Sable Lake and Log Slide. Improving the remainder of County Road H-58 outside of national lakeshore boundaries (by the county) would make the scenic character more open.

#### **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The irretrievable and irreversible commitments of resources that are associated with this alternative are summarized below. Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term (e.g., the regrowth of an old-growth forest). Irretrievable commitments are those that are

lost for a period of time (e.g., if a road is constructed, the vegetative productivity is lost for as long as the highway remains).

No irreversible or irretrievable commitments of resources were identified for the preferred alternative.

#### **RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY**

This section discusses the effects of the short-term use of resources in this alternative on the long-term productivity of the resources.

There would be no adverse effects on biological or agricultural productivity associated with implementing the preferred alternative.

## IMPACTS OF ALTERNATIVE A

### IMPACTS ON CULTURAL RESOURCES

#### Archeological Sites

The construction operations associated with paving County Road H-58 and constructing the Miners campground and the new east-end administrative maintenance facility could result in damage to potential archeological sites in the vicinity of the road right-of-way/proposed construction. Before any ground-disturbing activities occurred, surveys would be done to identify the presence of archeological resources in the project area. When possible, identified sites would be avoided and protected to the extent possible, depending on staffing and funding levels. If avoidance was not possible, impacts would be mitigated by recovering site data, which would be done in accord with an archeological data recovery assessment developed in consultation with the state historic preservation officer (see “Mitigation” section). The resultant impacts on sites that could not be avoided would be anticipated to be long term, minor (for sites with low data recovery potential) to moderate (for sites with greater data recovery potential), and adverse.

**Cumulative Impacts.** An archeological site could possibly be disturbed/exposed/impacted by human activity (such as residential development, recreational activities, logging, or artifact hunting) or natural processes (such as erosion or vegetation loss). The possibility of ground disturbance and exposure would be most likely at readily accessible locations such as Miners Beach, Hurricane River, Grand Sable Lake, Little Beaver Lake, and several backcountry locations. The site would be protected to the extent possible, depending on staffing and funding levels. The loss would be mitigated by data recovery (salvage archeology), which would be done in consultation with the state historic preservation officer (see “Mitigation”

section). The resulting impact on such sites would be anticipated to be adverse, long term, and minor (at a site with low data potential) to moderate (at a site with greater data potential). These impacts, combined with the impacts of paving and constructing roads, constructing the east-end administration/maintenance facility, and constructing a campground would have a long-term minor to moderate adverse cumulative impact on archeological sites under alternative A.

**Conclusion.** Should sites be identified during surveys of project areas, these site(s) would be protected to the extent possible, depending on staffing and funding levels. When possible, the site would be avoided; if avoidance was not possible, impacts would be mitigated by recovering site data. The overall impacts on sites that could not be avoided would be long-term, minor to moderate (depending on the data recovery potential of the site) adverse impacts.

There would be no impairment of archeological sites.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would result in adverse effects on archeological sites that were disturbed by construction activities and could not be avoided.

#### Historic Structures

Preserving and rehabilitating the Munising Range Light Station; rehabilitating the Sand Point Coast Guard Station and boat house, and actively interpreting the site and moving some of the adaptive uses to other sites; doing preservation treatment on the ancillary buildings at the Au Sable Light Station;

rehabilitating structures at and developing a site plan for the Grand Marais Coast Guard Station; rehabilitating the Grand Marais Harbor of Refuge quarters; and rehabilitating the Abrahamson barn and preserving other structures at the Abrahamson farm would help protect the documented architectural values (in compliance with the *Secretary's Standards for Historic Structures*) of these structures. Historic buildings would be enhanced through rehabilitation of these resources as recommended in the historic structure reports/ plans. Although some historic fabric might be lost during preservation/rehabilitation efforts, a minor long-term adverse impact (because changes would be minimal), overall there would be a long-term minor to moderate beneficial impact because the structures would be rehabilitated and documented architectural elements and values would be protected.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in alternative A to have a cumulative impact on historic structures.

**Conclusion.** Actions under this alternative would have long-term minor to moderate beneficial impacts on the Munising Range Light Station, Au Sable Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, and the Abrahamson and Becker Farms because the structures would be rehabilitated and preserved and documented architectural values would be preserved.

There would be no impairment of historic structures.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 "Assessment of Adverse Impacts") the National Park Service finds that the selection of this alternative would have an adverse impact from the loss of some historic fabric from the preservation/rehabilitation

efforts (changes would be minimal). However, overall there would not be an adverse effect because the structures would be preserved from further deterioration and important architectural elements and values would be protected.

### Cultural Landscapes

Restoring the cultural landscape at the Munising Range Light Station; restoring cultural landscape at the Sand Point Coast Guard Station and boat house, actively interpreting the site; and moving some of the adaptive uses to other sites; restoring the cultural landscape at the Au Sable Light Station; restoring the cultural landscape and developing a site plan for the Grand Marais Coast Guard Station; restoring the cultural landscape at the Grand Marais Harbor of Refuge quarters; and restoring the cultural landscape at the Abrahamson and Becker Farms would be a long-term moderate beneficial impact on these important cultural landscapes. Significant elements of the historic scenes would be restored to a reasonable facsimile of their period of historical significance, documented values would be preserved, and noncontributing elements would be removed.

In areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, woody vegetation would encroach, resulting in a more closed-in appearance and eventual change to a more wooded scene. This would result in the loss of landscapes associated with farming or other agricultural activities. The potential loss of some of these remaining landscapes in the national lakeshore would have a minor long-term adverse impact on these cultural landscapes and relatively few would be left.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the

actions proposed in alternative A to have a cumulative impact on cultural landscapes.

**Conclusion.** Restoring the cultural landscapes at the Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson Farm under this alternative would have long-term, moderate beneficial impacts on the cultural landscapes associated with these sites by preserving their documented values, removing noncontributing elements, and adding other elements reflective of a reasonable facsimile of the cultural landscape's period of significance.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, resulting in the eventual loss of landscapes associated with farming or other agricultural activities — a minor long-term adverse impact on these cultural landscapes, and relatively few would be left.

There would be no impairment of cultural landscapes.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would not have adverse effects on the cultural landscapes at Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson Farm.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads, resulting in the eventual loss of landscapes associated with farming or other agricultural activities — an adverse impact on these cultural landscapes, and relatively few would be left.

## Ethnographic Resources

Under alternative A, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from visitor-related activities such as motorboats, and tour boats. These conflicts would constitute a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional. (Areas where impacts could occur include high cliffs or promontories, river and creek mouths, inland lakes, Lake Superior, and the Grand Sable Dunes.)

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in alternative A to have a cumulative impact on ethnographic resources.

**Conclusion.** Under alternative A, there would be no project- or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from visitor-related activities such as motorboats, and tour boats. These conflicts would constitute a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional.

There would be no impairment of ethnographic resources.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that

the selection of this alternative would have recurring, occasional, adverse impacts on the ability of American Indians to collect resources for ceremonial and religious purposes or to conduct ceremonies.

### Museum Collection

Moving the museum collection to the proposed new administrative headquarters building near Munising would provide long-term major beneficial effects for the preservation the collection because the new repository would meet modern professional standards and would be more accessible to staff and researchers.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions described above (moving the collection to a repository that meets professional standards) to have a cumulative impact on the museum collection under the alternative A.

**Conclusion.** Actions under this alternative would have long-term major beneficial impacts on the preservation of and access to the national lakeshore's museum collection by staff and researchers because the collection would be housed in a new repository that would meet modern professional standards and would be more accessible to staff and researchers.

There would be no impairment of the museum collection.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 "Assessment of Adverse Impacts") the National Park Service finds that the selection of this alternative would not have an adverse effect on the museum collection.

## IMPACTS ON NATURAL RESOURCES

### Species of Concern

The continuation of current use patterns, including motorized boats on the Beaver and Grand Sable Lakes, would likely have no discernible adverse effect on nesting bald eagles in those areas. This determination is based on the following observations: that the nests were established while boating has been occurring; the use of the lakes during the critical period is low; and the boat use (fishing) occurs outside the tertiary buffer during critical periods (nesting, incubation, and brooding) (USFWS 1983). The nests are 0.25 mile or more away from these lakes, which is an acceptable distance to minimize the effect of human activity during nesting and fledging activity. Hiking occurs on a trail near one of the nests, but use during the critical periods is low, and the trail is outside the secondary buffer identified by the U.S. Fish and Wildlife Service (USFWS 1983).

Because there would be no change in the management of Grand Sable Dunes, Pitcher's thistle and other species of concern found in the dunes would continue to benefit from the protection afforded by the designation of the area as a research natural area. All species of concern found in the dunes would remain protected.

There would be no appreciable increase in the density of roads, although road improvements, particularly the paving of primary lakeshore roads, could result in higher travel speeds. High speeds (about 60 miles per hour) could increase the potential for road fatalities if wolf use coincides with traffic use. The design for H-58 would incorporate elements to provide a design speed of about 35 miles per hour. As a result, implementing alternative A would have a negligible effect on gray wolves. Wolf use would be expected to follow present patterns, influenced by climate and food availability. Conditions within the national lakeshore would not be expected to

change drastically, providing a moderate benefit for the gray wolf. Wolf use of the national lakeshore is not critical to the population and is not likely to become so.

Developing the Miners campground would increase human presence in that area. It is unlikely that campground development would have any effect on wolves because the levels of development in the lakeshore are well below those that could affect wolf use, and wolf use in the lakeshore is sporadic.

Abandoning primitive roads in the Beaver Basin and other areas managed under the primitive prescription would have a negligible effect on species of concern because the roads do not traverse specific habitat associated with species of concern.

**Cumulative Impacts.** Consultation with Michigan Department of Natural Resources, the U.S. Forest Service, the U.S. Fish and Wildlife Service, and ForestLand Group, Limited Liability Corporation, indicate that all agencies and entities implement policies that offer consideration and protection to species of concern in accord with federal and state law regarding threatened, endangered, or other species of concern. Such policy provides a potentially major long-term benefit for species of concern in the inland buffer zone and Alger and Schoolcraft Counties, (and the state).

In Michigan, threatened and endangered species are protected on both public and private land. The Endangered Species Protection law states that an individual may not harm or take threatened and endangered species (Michigan Natural Resources and Environmental Protection Act 1994, part 365). It is the responsibility of the landowner to submit projects for review to determine if a threatened or endangered species is known to occur or has potential to occur within the project scope. Logging on state land is conducted under these guidelines. ForestLand Group, Limited Liability

Corporation, management practices address species of concern as identified by the Michigan Department of Natural Resources and the U.S. Fish and Wildlife Service. Such law provides a potentially major long-term benefit for species of concern in the inland buffer zone, and Alger and Schoolcraft Counties, (and the state).

Also, the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources conduct active management programs for the gray wolf in the Seney area, a major short- and long-term benefit for this species in the central Upper Peninsula.

Although the policies and laws mentioned above do not guarantee protection, they do serve as more of a deterrent to harming endangered species than without these laws. In combination with federal laws that protect endangered species, overall cumulative effect is that species of concern would continue to be protected in the national lakeshore, a major short- and long-term benefit.

**Conclusion.** As in the no-action alternative, continuing current management practices would perpetuate short- and long-term beneficial impacts for species of concern. Preserving Grand Sable Dunes as a research natural area would continue to provide a major long-term benefit for species of concern in that area by providing an environment with very limited use or disturbance. There would be no discernable adverse impacts on the bald eagle, pitcher's thistle, the gray wolf, or other species of concern expected if alternative A was implemented. Species occurring north of the inland buffer zone elsewhere in the lakeshore would continue to benefit from federal (NPS) protection. Species on state lands are afforded protection through review and management. Species on corporate and privately owned land are subject to state law and require review by the Michigan Department of Natural Resources to ensure protection. Although these laws and policies do not

guarantee protection, they are an added incentive for protecting these species.

There would be no impairment of the park's species of concern.

### Wilderness Resources and Values

Although there would be no designated wilderness, wilderness values in Beaver and Chapel Basins would be preserved by the primitive management prescription — a major long-term benefit. Wilderness values in the Chapel and Beaver Basins would not be guaranteed without designated wilderness. Unlike congressionally designated wilderness, which guarantees the wilderness values will be protected in perpetuity, management prescriptions can be changed via a general management plan amendment. Because management of the wilderness values cannot be guaranteed in perpetuity, this represents a moderate long-term adverse impact on wilderness values.

Opportunities for solitude and natural quiet would improve with the reduction of noise from the public address system used on tour boats — a moderate, long-term, intermittent beneficial impact.

**Cumulative Impacts.** Natural quiet would continue to be diminished to a moderate degree by logging in the inland buffer zone. The effects are cyclic and depend on the proximity of logging activity to Beaver and Chapel Basins. The effect is moderate and would continue for the long term.

**Conclusion.** Overall, wilderness values would continue to benefit from managing much of the land within the Chapel and Beaver Basins under the primitive management prescription — a major long-term benefit. Reducing the sound on the public address system on the tour boats would improve wilderness values along the shoreline from the west boundary to Chapel Beach over the long term, but

intermittently, to a moderate degree. Wilderness values in the Chapel and Beaver Basins would not be guaranteed without designated wilderness — a moderate, long-term, adverse impact.

Although the opportunity for solitude would continue to be adversely affected by logging in the inland buffer zone, to a moderate degree, these impacts would occur intermittently and for short periods of time. Noise from the tour boats would be reduced with a different sound system for the tour boat public address system. There would be no major adverse impacts on resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the national lakeshore's establishing legislation, (2) key to the natural or cultural integrity or opportunities for enjoyment of the national lakeshore, or (3) identified as a goal in this general management plan or other relevant NPS planning documents. Consequently, there would be no impairment of wilderness resources or values.

### IMPACTS ON SOCIOECONOMIC RESOURCES (LOCAL ECONOMY AND COUNTY TAX BASE)

Alternative A follows the current management direction. In addition, this alternative would require several development and restoration projects (construction of a small administration and maintenance facility at the east end of the national lakeshore, a new administration building adjacent to the Munising maintenance facility, and a new campground and trails; paving H-58; and partial landscape restoration at the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, Au Sable Light Station, the Munising Range Light Station, and the Abrahamson Farm) to be accomplished over the life of this plan. There would be some benefits from expenditures of about \$37 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would

be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects. This economic activity would occur over time as various projects are phased in and others are completed. How much the Alger County economy actually benefits would depend upon the degree to which national lakeshore needs are fulfilled within and by the local businesses.

The national lakeshore would remain a part of the local socioeconomic environment. NPS expenditures for goods, services, and staff would continue to benefit the local economy. Visitors would still be attracted to the county because of the national lakeshore, and their spending patterns would continue to contribute to the area's economy. The actions proposed in alternative A are expected to result in short-term beneficial impacts on income, earnings, and employment. There are no indications that the actions and effects of this alternative would result in any long-term impacts on the major socioeconomic indicators (population, income, earnings, employment, unemployment, and poverty) in Alger County.

**Cumulative Impacts.** Development projects in the national lakeshore, combined with ongoing activities in the construction sector outside the national lakeshore (some new housing construction and proposed commercial development on the outskirts of Munising) would contribute short-term expenditures over the life of the plan that would be a minor beneficial cumulative impact that would primarily affect the construction industry.

**Conclusion.** Overall, the long-term benefits of implementing this alternative would be minor to moderate when compared to the overall economy of the predominantly rural Alger County. There would be some benefits from expenditures of about \$37 million in life-

cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative (such as construction of a small administration and maintenance facility at the east end of the national lakeshore, a new administration building adjacent to the Munising maintenance facility, and a new campground and trails; paving H-58; and partial landscape restoration at several sites). The operations of the national lakeshore would be a continuing long-term, beneficial contribution to the local economy.

## **IMPACTS ON VISITOR USE AND EXPERIENCE**

### **Opportunities for Recreational Activities**

There would be no new impacts of continuing opportunities for popular recreational activities (e.g., hiking, backcountry camping, scenic driving, boating, hunting, fishing, kayaking, motorboat tours, skiing, ice climbing, and snowmobiling) continued use of motorboats on the Beaver Lakes and Grand Sable Lakes (with restrictions on motor size), continued commercial air tours, and continued backcountry camping (in designated campgrounds), as in the no-action alternative.

Drive-in camping options would be expanded by adding a campground in the Miners area, providing more opportunities for national lakeshore camping, a moderate long-term benefit. Adding hiking trails south of the Miners area might mean that hikers in this area would encounter more hikers than in the no-action alternative — a minor adverse impact.

Opportunities for touring and learning about historic resources would be improved by restoration/preservation measures and other

improvements at Sand Point, Grand Marais, and Au Sable Light Station. These improvements would have a major long-term beneficial impact on visitor experiences.

The opportunity for a long, primitive driving experience leading to primary national lakeshore features would be lost if the county paves the portion of County Road H-58 that is between Little Beaver Lake Road and Grand Sable Lake. This loss would be a moderate adverse impact on visitors over the long term because most feel that that the primitive experience (narrow road, little traffic, slow speeds, and forest canopy, which would change with paving) contributes beneficially to their national lakeshore visit (Pitt, Lime, and Vlaming 1991).

The closure of old logging roads ('two tracks') to vehicular travel would slightly reduce opportunities for visitors to enjoy a more primitive, slower, unpaved driving experience, a minor long-term adverse impact.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on providing opportunities for recreational activities at the national lakeshore under this alternative.

**Conclusion.** Impacts on opportunities for recreational activities would be mixed and long term. Additional opportunities for camping, hiking, and touring historic resources would have a major beneficial impact, and reducing opportunities for long primitive driving experiences leading to primary national lakeshore features would have a moderate long-term adverse impact.

### Access to Primary National Lakeshore Features

If done by the county, road improvements — paving County Road H-58 throughout the

lakeshore, enabling visitors to get more easily and quickly to Little Beaver Lake, Beaver Basin overlook, Twelvemile Beach, Log Slide, and Au Sable Light Station — would mean that visitors could see more lakeshore features in a given length of time compared to the no-action alternative, a moderate long-term beneficial impact. On the other hand, certain areas would probably get more visitors and could be crowded at times, a minor long-term adverse impact.

Commercial tour boats and commercial kayak tours, both of which could continue, provide the best views of the Pictured Rocks cliffs, continuing a long-term moderate benefit for visitors onboard boats.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on access to primary national lakeshore features under this alternative.

**Conclusion.** Compared to the no-action alternative. Impacts on access to primary features would be mostly beneficial and long term. Due to road improvements visitors could see more lakeshore features in a given length of time, a moderate long-term beneficial impact. On the other hand, certain areas could be crowded at times, a minor long-term adverse impact. Motorized and nonmotorized boats would continue to approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.

### Noise

As in the no-action alternative, noise from snowmobiles, motorboats, and chainsaws would continue to have a long-term, moderate adverse impact on the visitor experience unless ways to reduce or muffle the sounds were implemented. Noise from the tour boat public address system would be reduced

under this alternative — a long-term moderate beneficial impact. Sounds from vehicles on the road to Little Beaver Lake (especially sounds from towed trailers or campers) would continue to carry into Beaver Basin, continuing the long-term minor adverse impact on visitors there.

**Cumulative Impacts.** Noise outside of the national lakeshore is primarily from personal watercraft outside the 0.25-mile boundary near the east and west ends of the national lakeshore, chainsaws associated with logging activities adjacent to the inland buffer zone, and snowmobiles in the winter along County Road H-58. These activities produce generally short-term, minor to moderate adverse impacts (depending on proximity to the noise source and setting). There would also be occasional noise sources within the national lakeshore — snowmobiles and vehicles on roads in the national lakeshore, and chainsaws used for logging in the inland buffer zone. These disruptions, in combination with the noise sources mentioned above that are outside the national lakeshore, would result in continuing adverse short-term minor to moderate (depending on proximity to the noise source and setting) cumulative impacts on the natural quiet of the national lakeshore. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact.

**Conclusion.** Man-made noise from snowmobiles, motorized boats, and chainsaws from logging operations would continue to have a long-term, moderate adverse impact on the visitor experience. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact.

### **Scenic Character of County Road H-58**

In alternative A, the county would be encouraged to pave H-58 for its entire length

between Munising and Grand Marais. Efforts to maintain characteristics that visitors say contribute to the road's scenic character (narrow width, curves, and forest canopy or tunnel) would also be recommended, but some loss of these characteristics would be unavoidable. If County Road H-58 was improved, the section of road close to the shoreline bluff, near Sullivan's Creek, would be relocated away from the shoreline, meaning that views of Lake Superior from H-58 would no longer be possible. Taken together, recommended changes to H-58 under alternative A would result in a moderate long-term adverse impact on the visitor experience.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on the scenic character of County Road H-58 under this alternative.

**Conclusion.** If recommended changes to County Road H-58 occurred, these changes would have moderate long-term adverse impacts on its scenic character.

### **Opportunities for People with Disabilities**

No new outdoor features would be made accessible to visitors with disabilities under alternative A; however, a new campground at Miners would be accessible to visitors with disabilities, providing additional options for visitors who are not able to use backcountry campgrounds. Compared to the no-action alternative this would have a minor long-term beneficial impact.

Moving the headquarters from Sand Point to a new administration building (accessible to people with disabilities) near the Munising maintenance facility and consolidating the east-end lakeshore administrative and maintenance in a new facility (accessible to

people with disabilities) near Grand Marais would be a major beneficial impact on disabled lakeshore staff and other disabled persons needing to conduct business in the national lakeshore.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on opportunities for people with disabilities under this alternative.

**Conclusion.** Making the Miners campground accessible to people with disabilities would have a minor impact on these visitors.

Moving the headquarters function to a new administration building near Munising and consolidating administrative and maintenance in a new facility near Grand Marais (both accessible to people with disabilities) would have a major long-term beneficial impact on staff and others with disabilities who might need to conduct business in the national lakeshore.

## IMPACTS ON NATIONAL LAKESHORE OPERATIONS

Consolidating national lakeshore operations in new facilities that meet NPS standards at both ends of the national lakeshore would improve operational efficiency and provide a long-term moderate benefit.

If the recommended paving of H-58, the primary access route to the central and eastern portions of the national lakeshore, occurred, this would be a minor long-term benefit for emergency response times in those portions of the lakeshore; the road would still be a slow-speed road by design.

There would be no change in, and thus no new impacts on, staff access (for maintenance and resource management) to the Beaver

Lakes, along the Lake Superior shoreline, and the Chapel area.

Developing a new drive-in campground would have a minor long-term adverse impact on enforcement staff who would have another site to patrol.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on the national lakeshore operations under this alternative.

**Conclusion.** Implementing alternative A would have a moderate long-term benefit on national lakeshore operations from consolidating operations in new facilities at both ends of the national lakeshore.

If the county paves H-58 as recommended, emergency response times in those portions of the lakeshore would improve, a minor long-term benefit.

There would be no change in, and thus no new impacts on, staff access (for maintenance and resource management) to the Beaver Lakes, along the Lake Superior shoreline, and the Chapel area.

## UNAVOIDABLE ADVERSE IMPACTS

The following discussion identifies impacts on resources associated with the implementation of this alternative. These impacts have been identified as being unavoidable, moderate to major, and adverse.

Some archeological sites adjacent to construction or that are easily accessible would be subject to disturbance.

Noise from motorized boats, tour boats, and logging activities would continue.

Recommended improvements to County Road H-58, if made, would change its scenic quality from a primitive road to a rural highway experience between Grand Sable Lake and Kingston Lake.

#### **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The irretrievable and irreversible commitments of resources that are associated with this alternative are summarized below. Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term (e.g., the regrowth of an old-growth forest). Irretrievable commitments are those that are lost for a period of time (e.g., if a road is constructed, the vegetative productivity is lost for as long as the highway remains).

There would be no irreversible and irretrievable commitments of resources under this alternative.

#### **RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY**

This section discusses the effects of the short-term use of resources in this alternative on the long-term productivity of the resources.

There would be no adverse effects on biological or agricultural productivity associated with implementing alternative A.

## IMPACTS OF ALTERNATIVE C

### IMPACTS ON CULTURAL RESOURCES

#### Archeological Sites

The construction operations associated with paving County Road H-58 and constructing the Miners campground, Sevenmile overlook and access road, the new east-end administrative maintenance facility, and possibly a small interpretive center in the Miners Castle area could result in damage to potential archeological sites in the vicinity of the road right-of-way/ proposed construction. Before any ground-disturbing activities occurred, surveys would be done to identify the presence of archeological resources in the project area. When possible, identified sites would be avoided and protected to the extent possible, depending on staffing and funding levels. If avoidance was not possible, impacts would be mitigated by recovering site data, which would be done in accord with an archeological data recovery assessment developed in consultation with the state historic preservation officer (see “Mitigation” section). The resultant impacts on sites that could not be avoided would be anticipated to be long term, minor (for sites with low data recovery potential) to moderate (for sites with greater data recovery potential), and adverse.

**Cumulative Impacts.** An archeological site could possibly be disturbed/exposed/impacted by human activity (such as residential development, recreational activities, logging, or artifact hunting) or natural processes (such as erosion or vegetation loss). The possibility of ground disturbance and exposure would be most likely at readily accessible locations such as Miners Beach, Hurricane River, Grand Sable Lake, Little Beaver Lake, and several backcountry locations. The site would be protected to the extent possible, depending on staffing and funding levels. The loss would be mitigated by data recovery (salvage

archeology), which would be done in consultation with the state historic preservation officer (see “Mitigation” section). The resulting impact on such sites would be anticipated to be adverse, long term, and minor (at a site with low data potential) to moderate (at a site with greater data potential). These impacts, combined with the impacts of paving H-58 and constructing the east-end administration/maintenance facility, a campground, and the Sevenmile overlook and access road, and possibly a small interpretive center in the Miners area would have a long-term minor to moderate adverse cumulative impact on archeological sites under alternative C.

**Conclusion.** Should sites be identified during surveys of project areas, these site(s) would be protected to the extent possible, depending on staffing and funding levels. When possible, the site would be avoided; if avoidance was not possible, impacts would be mitigated by recovering site data. The overall impacts on sites that could not be avoided would be long-term, minor to moderate (depending on the data recovery potential of the site) adverse impacts.

There would be no impairment of archeological sites.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would result in adverse effects on archeological sites that were disturbed by construction activities and could not be avoided.

#### Historic Structures

Preserving and rehabilitating the Munising Range Light Station; rehabilitating the Sand

Point Coast Guard Station and boat house, and actively interpreting the site and moving some of the adaptive uses to other sites; doing preservation treatment on the ancillary buildings at the Au Sable Light Station; rehabilitating structures at and developing a site plan for the Grand Marais Coast Guard Station; rehabilitating the Grand Marais Harbor of Refuge quarters; and rehabilitating the Abrahamson barn and preserving other structures at the Abrahamson farm would help protect the documented architectural values (in compliance with the *Secretary's Standards for Historic Structures*) of these structures. Historic buildings would be enhanced through rehabilitation of these resources as recommended in the historic structure reports/plans. Although some historic fabric might be lost during preservation/ rehabilitation efforts, a minor long-term adverse impact (because changes would be minimal), overall there would be a long-term minor to moderate beneficial impact because the structures would be rehabilitated and documented architectural elements and values would be protected.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in alternative C to have a cumulative impact on historic structures.

**Conclusion.** Actions under this alternative would have long-term minor to moderate beneficial impacts on the Munising Range Light Station, Au Sable Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, and the Abrahamson farm because the structures would be rehabilitated and preserved and documented architectural values would be preserved.

There would be no impairment of historic structures.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation

(36 CFR 800.5 "Assessment of Adverse Impacts") the National Park Service finds that the selection of this alternative would have an adverse impact from the loss of some historic fabric from the preservation/rehabilitation efforts (changes would be minimal). However, overall there would not be an adverse effect because the structures would be preserved from further deterioration and important architectural elements and values would be protected.

### Cultural Landscapes

Restoring the cultural landscape at the Munising Range Light Station; restoring cultural landscape at the Sand Point Coast Guard Station and boat house, actively interpreting the site; and moving some of the adaptive uses to other sites; restoring the cultural landscape at the Au Sable Light Station; restoring the cultural landscape and developing a site plan for the Grand Marais Coast Guard Station; restoring the cultural landscape at the Grand Marais Harbor of Refuge quarters; and restoring the cultural landscape at the Abrahamson and Becker Farms would be a long-term moderate beneficial impact on these important cultural landscapes. Significant elements of the historic scenes would be restored to a reasonable facsimile of their period of historical significance, documented values would be preserved, and noncontributing elements would be removed.

In areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, woody vegetation would encroach, resulting in a more closed-in appearance and eventual change to a more wooded scene. This would result in the loss of landscapes associated with farming or other agricultural activities. The potential loss of some of these remaining landscapes in the national lakeshore would have a minor long-term adverse impact on

these cultural landscapes, and relatively few would be left.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in the alternative C to have a cumulative impact on cultural landscapes.

**Conclusion.** Restoring the cultural landscapes at the Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson and Becker Farms under this alternative would have long-term, moderate beneficial impacts on the cultural landscapes associated with these sites by preserving their documented values, removing noncontributing elements, and adding other elements reflective of a reasonable facsimile of the cultural landscape's period of significance.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, resulting in the eventual loss of landscapes associated with farming or other agricultural activities — a minor long-term adverse impact on these cultural landscapes, and relatively few would be left.

There would be no impairment of cultural landscapes.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would not have adverse effects on the cultural landscapes at Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson Farm.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads, resulting in the eventual loss of landscapes associated with farming or other agricultural activities – an adverse impact on these cultural landscapes, and relatively few would be left.

### **Ethnographic Resources**

Under alternative C, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from visitor-related activities such as motorboats, and tour boats. These conflicts would constitute a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional. (Areas where impacts could occur include high cliffs or promontories, river and creek mouths, inland lakes, Lake Superior, and the Grand Sable Dunes.)

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in alternative C to have a cumulative impact on ethnographic resources.

**Conclusion.** Under this alternative, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from visitor-related activities such as motorboats, and tour boats. These conflicts would constitute a minor, short-term,

reoccurring, adverse impact; however, conflicts would only be occasional.

There would be no impairment of ethnographic resources.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would have recurring, occasional, adverse impacts on the ability of American Indians to collect resources for ceremonial and religious purposes or to conduct ceremonies.

### **Museum Collection**

Moving the museum collection to the proposed new administrative headquarters building near Munising would provide long-term major beneficial effects for the preservation the collection because the new repository would meet modern professional standards and would be more accessible to staff and researchers.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions described above (moving the collection to a repository that meets professional standards) to have a cumulative impact on the museum collection under alternative C.

**Conclusion.** Actions under this alternative would have long-term major beneficial impacts on the preservation of and access to the national lakeshore’s museum collection by staff and researchers because the collection would be housed in a new repository that would meet modern professional standards and would be more accessible to staff and researchers.

There would be no impairment of the museum collection.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would not have an adverse effect on the museum collection.

## **IMPACTS ON NATURAL RESOURCES**

### **Species of Concern**

The continuation of current use patterns, including motorized boats on the Beaver and Grand Sable Lakes, would likely have no discernable adverse effect on nesting bald eagles in those areas. This determination is based on the following observations: that the nests were established while boating has been occurring; the use of the lakes during the critical period is low; and the boat use (fishing) occurs outside the tertiary buffer during critical periods (nesting, incubation, and brooding) (USFWS 1983). The nests are 0.25 mile or more away from these lakes, which is an acceptable distance to minimize the effect of human activity during nesting and fledging activity. Hiking occurs on a trail near one of the nests, but use during the critical periods is low, and the trail is outside the secondary buffer identified by the U.S. Fish and Wildlife Service (USFWS 1983).

Because there would be no change in management of Grand Sable Dunes, Pitcher’s thistle and other species of concern found there would continue to be protected by the research natural area designation. The species of concern in the dunes environment would remain stable and primarily subject to natural change. The construction of boat-in campsites at Grand Sable Lake would not likely result in increased use of Grand Sable Dunes because the primary focus of these visitors would be boating and fishing and no trails would be developed.

The abandonment of two track roads in the Beaver Basin and other areas managed as primitive would have a negligible effect on species of concern because the roads do not traverse habitat of species of concern.

Development of the proposed Miners campground and associated trails would increase human activity in the area, but the level of development at this site and throughout the lakeshore would remain well below densities described by the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources and would not likely affect wolf use in the lakeshore (USFWS 1992; MDNR 1997). There would be no appreciable increase in the density of roads, although road improvements, particularly paving of primary roads, could result in higher travel speeds. High speeds (about 60 miles per hour) could increase the potential for road fatalities if wolf use coincides with traffic use. The design for H-58 would incorporate elements to provide a design speed of about 35 miles per hour.

**Cumulative Impacts.** Logging on state land is conducted under guidelines established by the Michigan Endangered Species Protection law, Part 365 of the Natural Resources and Environmental Protection Act, Act 451 of the Michigan Public Acts of 1994, which affords protection to species of concern identified by the state. Logging on corporate and private land is subject to the same law that applies to state land. The ForestLand Group, Limited Liability Corporation, management practices address species of concern as identified by the state and the U.S. Fish and Wildlife Service. The overall effect is that species of concern would continue to be afforded protection in the inland buffer zone.

Also, the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources conduct active management programs for the gray wolf in the Seney area, a major short- and long-term benefit for this species in the central Upper Peninsula.

Although the policies and laws mentioned above do not guarantee protection, they do serve as more of a deterrent to harming endangered species than without these laws. In combination with federal laws that protect endangered species, overall cumulative effect is that species of concern would continue to be protected in the national lakeshore, a major short- and long-term benefit.

**Conclusion.** As in the no-action alternative, continuing current management practices would perpetuate short- and long-term beneficial impacts for species of concern. Preserving Grand Sable Dunes as a research natural area would continue to provide a major long-term benefit for species of concern in that area by providing an environment with very limited use or disturbance. There would be no discernable adverse impacts on the bald eagle, pitcher's thistle, the gray wolf, or other species of concern expected if alternative C was implemented. Species occurring north of the inland buffer zone elsewhere in the lakeshore would continue to benefit from federal (NPS) protection. Species on state lands are afforded protection through review and management. Species on corporate and privately owned land are subject to state law and require review by the Michigan Department of Natural Resources to ensure protection. Although these laws and policies do not guarantee protection, they are an added incentive for protecting these species.

There would be no impairment of species of concern.

### **Wilderness Resources and Values**

Although there would be no designated wilderness, wilderness values in Beaver Basin would be preserved by management under the primitive prescription — a moderate long-term benefit. However, unlike congressionally designated wilderness, which guarantees the wilderness values will be protected in perpetuity, management prescriptions can be

changed via a general management plan amendment. Wilderness values could be adversely affected in the long term without the designation of wilderness — a moderate long-term impact.

Converting Chapel Basin from the backcountry to the casual prescription to improve old roads currently used as trails and to provide vehicle access to Chapel Rock would reduce its wilderness values by opening an area that is currently not accessible by vehicle — a long-term moderate adverse impact. This adverse impact would be moderate and long term; it would also be reversible.

Constructing the Sevenmile Creek road and overlook could introduce additional noise from cars and associated activity. The area the road would traverse is predominantly state land. The overlook would be at the Beaver Basin rim, inside the shoreline zone, but the parking area would be set back from the rim to mitigate the noise. Constructing the overlook would also require clearing an area to open a vista that has not been disturbed for some time, which is forested with mature hardwoods. The overlook would be small, and use would be expected to be light. The overlook would diminish wilderness values in the Beaver Basin to a minor degree — a minor adverse impact.

Opportunities for solitude and natural quiet would improve with the reduction in noise from the tour boat public address systems, which would be a long-term, beneficial, intermittent, moderate impact.

**Cumulative Impacts.** In Alger County the total area of wilderness would remain unchanged. The opportunities for solitude and natural quiet would continue to be diminished by logging in the inland buffer zone. The effects would be cyclic and depend on the proximity of logging activity to the Beaver Basin. The effect would be moderate and would continue for the long term.

**Conclusion.** There would be a moderate long-term benefit from continuing to manage Beaver Basin under the primitive prescription. Wilderness values would be reduced because management of a portion of Chapel Basin would change from backcountry to casual recreation — a moderate, long-term adverse impact. The opportunity for solitude and natural quiet would continue to be diminished by logging unless logging was reduced — a moderate, long-term, intermittent, adverse impact. Opportunities for solitude and natural quiet would improve with the reduction of noise from the public address system used on tour boats between the west boundary and Chapel Beach — a moderate, long-term, intermittent beneficial impact.

Development of the Sevenmile Creek overlook would diminish the opportunity for solitude and natural quiet to a minor degree for the long term.

Wilderness values could be adversely affected in the long term without the designation of wilderness — a moderate long-term impact.

Although the opportunity for solitude would continue to be adversely affected by logging in the inland buffer zone to a moderate degree, these impacts (from logging) would occur intermittently and for short periods of time. Because of modifications to the public address systems, noise from the tour boats would be reduced. There would be no major adverse impacts on resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the national lakeshore's establishing legislation, (2) key to the natural or cultural integrity or opportunities for enjoyment of the national lakeshore, or (3) identified as a goal in this general management plan or other relevant NPS planning documents. Consequently, there would be no impairment of wilderness resources or values from actions proposed under this alternative.

### IMPACTS ON SOCIOECONOMIC RESOURCES (LOCAL ECONOMY AND COUNTY TAX BASE)

Alternative C calls for a wide range of development and restoration projects (construction of the Sevenmile overlook road, Miners campground and trails, and the east-end administration/maintenance facility; paving H-58 and other access roads; and partial landscape restoration at the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, Au Sable Light Station, the Munising Range Light Station, and the Abrahamson Farm) to be completed during the life of this plan. There would be some benefits from expenditures of about \$74 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative. This economic activity would occur over time as various projects are phased in and others are completed. How much the Alger County economy actually benefits would depend upon the degree to which national lakeshore needs are fulfilled within and by the local businesses.

The donation of an easement on 240 acres (state land) and the acquisition of an easement on about 10 acres (ForestLand Group, Limited Liability Corporation land) would benefit the public by having this additional area added to the national lakeshore (for the Sevenmile overlook and road access). A minor one-time, expenditure of federal funds and a negligible effect on the county's tax base (from acquiring 10 acres) would result.

The national lakeshore would remain a part of the local socioeconomic environment. NPS expenditures for goods, services, and staff would continue to benefit the local economy. Visitors would still be attracted to the county

because of the national lakeshore, and their spending patterns would continue to contribute to the area's economy. The actions proposed in alternative C are expected to result in short-term beneficial impacts on income, earnings, employment, and unemployment. There are no indications that the actions and effects of this alternative would result in any long-term impacts on the major socioeconomic indicators (population, income, earnings, employment, unemployment, and poverty) in Alger County.

**Cumulative Impacts.** Development projects within the national lakeshore in this alternative combined with ongoing activities in the construction sector outside the national lakeshore (some new housing construction and proposed commercial development on the outskirts of Munising) would contribute short-term expenditures over the life of the plan that would have a minor beneficial cumulative impact primarily affecting the construction industry.

**Conclusion.** Overall, the long-term benefits of implementing this alternative would be moderate to major when compared to the overall economy of the predominantly rural Alger County. There would be some benefits from expenditures of about \$74 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative (such as construction of the Sevenmile overlook road, Miners campground and trails, and the east-end administration/ maintenance facility; paving H-58 and other access roads; and partial landscape restoration at the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, Au Sable Light Station, the Munising Range Light Station, and the Abrahamson Farm). The operations of the national lakeshore would be

a continuing long-term, beneficial contribution to the local economy.

## **IMPACTS ON VISITOR USE AND EXPERIENCE**

### **Opportunities for Recreational Activities**

There would be no new impacts from continuing opportunities for popular recreational activities (e.g., hiking, backcountry camping, scenic driving, boating, hunting, fishing, kayaking, tour boats, skiing, snowmobiling, and ice climbing), continuing use of motorboats on the Beaver Lakes and Grand Sable Lake (and restricting motor size, continuing commercial air tours, and continuing backcountry camping only in designated campgrounds, as is currently the case.

Building a new drive-in campground and trails at the Miners area, eliminating the Chapel backcountry campground and providing day use facilities would be a long-term beneficial impact on visitor experience for drive-in campers. Hikers in the Miners area might encounter more hikers than in the no-action alternative – a minor adverse impact. In a related action, expanding the Mosquito backcountry campground if necessary, and providing new opportunities for boat-in camping at Grand Sable Lake would be a beneficial impact on visitor experience.

Restoration/rehabilitation/preservation measures and other improvements at the Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the historic farm area near Grand Marais would improve opportunities for touring and learning about historic resources, a moderate long-term beneficial impact. Improvements at Coast Guard Point at Grand Marais would provide additional opportunities for day use activities. Taken together, these additional recreational options and improvements would have a

major long-term beneficial impact on the visitor experience.

The opportunity for a long, primitive driving experience that leads to primary national lakeshore features would be lost if the county paves the portion of County Road H-58 between Little Beaver Lake Road and Grand Sable Lake as recommended under this alternative; after paving some stretches would be wider, the road would be busier, vehicle speeds would increase, and the forest canopy over the road would be eliminated in some places. This would be a moderate long-term adverse impact on visitors who want a primitive driving experience.

In most areas of the national lakeshore, old logging roads ("two track" roads) that are now open to the public would remain open. Opportunities for primitive driving experiences on two track roads would continue to be available in alternative C except in Beaver Basin, a moderate long-term beneficial impact.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on providing for recreational activities at the national lakeshore under this alternative.

**Conclusion.** Impacts on recreational opportunities would be mixed and long term. Additional opportunities would come from new facilities (e.g., a campground, trails, boat-in campsites, building rehabilitation, landscape restoration, the new overlook and road, and paved roads); these would have a major beneficial impact. The opportunity for a long, primitive driving experience that leads to primary features would be eliminated if the county paves H-58 between Little Beaver Lake Road and Grand Sable Lake, a moderate long-term adverse impact for those wishing for this kind of experience.

### Access to Primary National Lakeshore Features

New roads and road improvements – paving the access roads to Miners Falls, Miners Beach, Chapel, Log Slide, and Grand Sable Lake; providing new vehicular access to the Chapel area and a Sevenmile Creek overlook area; upgrading the Beaver Basin overlook road to improved gravel; and recommending that the county pave County Road H-58 throughout the national lakeshore – would mean that visitors could visit many more lakeshore features in a given period of time compared to the no-action alternative, a major long-term beneficial impact.

Implementing alternative C would change the mix of access. More national lakeshore features would be easy to get to or require moderate effort; many challenging experiences would be lost. Crowding would be more likely at popular national lakeshore attractions. Areas that are now relatively remote and wild would have more visitors and more facilities.

Commercial tour boats and commercial kayak tours, both of which could continue to provide the best views of the Pictured Rocks cliffs, would be a long-term moderate benefit for visitors onboard the boats.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on access to primary national lakeshore features under this alternative.

**Conclusion:** The effect of implementing alternative C on access to primary features would be mixed and long term. Visitors could visit more lakeshore features in a given period of time than under the no-action alternative, a major long-term beneficial impact; however, certain areas might also become crowded, a minor adverse impact. Motorized and nonmotorized boats would continue to

approach cliffs and beaches on the Lake Superior shoreline, a long-term moderate benefit for visitors onboard the boats.

### Noise

As in the no-action alternative, noise from snowmobiles, motorboats, and chainsaws would continue to have a long-term, moderate adverse impact on the visitor experience unless ways to reduce or muffle the sounds were implemented. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact. Sounds from vehicles on the road to Little Beaver Lake (especially sounds from towed trailers or campers) would continue to carry into Beaver Basin, continuing the long-term minor adverse impacts on visitors there.

**Cumulative Impacts.** Noise outside of the national lakeshore is primarily from personal watercraft outside the 0.25-mile boundary near the east and west ends of the national lakeshore, chainsaws associated with logging activities adjacent to the inland buffer zone, and snowmobiles in the winter along County Road H-58. These activities produce generally short-term, minor to moderate adverse impacts (depending on proximity to the noise source and setting). There would also be occasional noise sources within the national lakeshore — snowmobiles and vehicles on roads in the national lakeshore, and chainsaws used for logging in the inland buffer zone. These disruptions, in combination with the noise sources mentioned above that are outside the national lakeshore, would result in continuing adverse short-term minor to moderate (depending on proximity to the noise source and setting) cumulative impacts on the natural quiet of the national lakeshore. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact.

**Conclusion:** Man-made noise from snowmobiles, motorized boats, and chainsaws from logging operations would continue to have a long-term, moderate adverse impact on the visitor experience. Noise from the tour boat public address system would be reduced under this alternative — a long-term moderate beneficial impact.

### **Scenic Character of County Road H-58**

Although efforts should be made to maintain characteristics that visitors say contribute to the road's scenic character (narrow width, curves, and forest canopy or tunnel), paving H-58 would result in some loss of these characteristics. As County Road H-58 was improved, the section of road close to the shoreline bluff, near Sullivan's Creek, would be relocated away from the shoreline. This means that views of Lake Superior from H-58 would no longer be possible. Altogether, changes to H-58 under alternative C would have a moderate long-term adverse impact on the road's scenic character.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on the scenic character of H-58 under this alternative.

**Conclusion:** If recommended changes were made to County Road H-58, the result would be moderate long-term adverse impacts on its scenic character.

### **Opportunities for People with Disabilities**

No additional existing outdoor attractions would be made accessible to visitors with disabilities under this alternative. A new road to Sevenmile Creek overlook would make it easier for visitors with disabilities to get to or see additional national lakeshore features. A new campground at Miners would be acces-

sible to visitors with disabilities, providing additional options for campers who are not able to use backcountry campgrounds. Coast Guard Point would be a new day use area that is accessible to visitors with disabilities. Compared to the no-action alternative these measures would have a minor long-term beneficial impact on disabled visitors.

Moving the headquarters function from Sand Point to a new administration building (accessible to visitors with disabilities) near the Munising maintenance facility and consolidating the lakeshore administrative and maintenance functions at the east end near Grand Marais would represent a major beneficial impact to disabled lakeshore staff and other disabled persons needing to conduct business in the national lakeshore.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on opportunities for visitors with disabilities under this alternative.

**Conclusion:** Providing a new road to Seven-mile Creek overlook, a new campground at Miners, and a new day use area at Coast Guard Point (accessible to people with disabilities) would make it easier for disabled visitors to get to, see, or use additional national lakeshore features. These actions would have minor long-term beneficial impacts on visitors with disabilities.

Moving the headquarters function to a new administration building (accessible to people with disabilities) near Munising and consolidating administrative and maintenance in a new facility near Grand Marais (also accessible to people with disabilities) would have a major long-term beneficial impact on staff and others with disabilities who might need to conduct business in the national lakeshore.

## IMPACTS ON NATIONAL LAKESHORE OPERATIONS

Operational efficiency would improve, providing a long-term moderate benefit, from consolidating national lakeshore operations (at both ends of national lakeshore) in new facilities that meet NPS standards.

Developing a new drive-in campground would have a minor long-term adverse impact on enforcement staff who would have an additional site to patrol.

If the county paves H-58 as recommended under this alternative, the primary route of access to the central and eastern portions of the national lakeshore, would result in a minor long-term decrease in emergency response times in the central and eastern portions of the lakeshore – a minor long-term benefit because it would remain, by design, a slow-speed road.

National lakeshore staff would continue to use motorized vehicles (wheeled vehicles or boats) to conduct maintenance and resource management activities at the Beaver Lakes and along the Lake Superior shoreline. Access to the Chapel area would change from hiking to wheeled vehicle with the construction of new roads to these areas making administrative access more efficient.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on national lakeshore operations under this alternative.

**Conclusion.** Implementing alternative C would have a net moderate long-term benefit on national lakeshore operations from consolidating operations in new facilities at both ends of the national lakeshore.

If the county paves H-58 as recommended under this alternative, emergency response

times would decrease, a minor long-term benefit because it would remain, by design, a slow-speed road.

Continued motorized access for maintenance and resource management activities at the Beaver Lakes and along the Lake Superior shoreline, and changing access to the Chapel area from hiking to vehicles would make administrative access more efficient in these areas.

## UNAVOIDABLE ADVERSE IMPACTS

The following discussion identifies impacts on resources associated with the implementation of this alternative. These impacts have been identified as being unavoidable, moderate to major, and adverse.

Some archeological sites adjacent to construction or that are easily accessible would be subject to disturbance.

Converting Chapel Basin from the primitive to the casual recreation management prescription would have a long-term moderate adverse impact.

The opportunity for solitude and natural quiet would continue to be reduced by logging and tour boat operations (unless logging was reduced or the public address system was modified to reduce projected sound), which would be a long-term moderate, intermittent, adverse impact.

The opportunity for an extended primitive driving experience to primary national lakeshore features over primitive roads would be lost.

Crowding and loss of solitary primitive experiences would have a major long-term negative effect on the visitor experience.

Noise from motorized boats, tour boats, and logging activities would continue.

If made by the county, improvements to County Road H-58 in the lakeshore would change its scenic quality from a primitive road to a rural highway experience between Grand Sable Lake and Kingston Lake.

Constructing the 2.5-mile improved gravel road to the proposed Sevenmile overlook would eliminate the vegetative production of the 2.5 miles of roadbed.

#### **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The irretrievable and irreversible commitments of resources that are associated with this alternative are summarized below. Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term (e.g., the regrowth of an old-growth forest). Irretrievable commitments are those that are lost for a period of time (e.g., if a road is constructed, the vegetative productivity is lost for as long as the highway remains).

#### **RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY**

This section discusses the effects of the short-term use of resources in this alternative on the long-term productivity of the resources.

There would be no adverse effects on biological, agricultural, or economic productivity associated with implementing alternative C.

## IMPACTS OF ALTERNATIVE E

### IMPACTS ON CULTURAL RESOURCES

#### Archeological Sites

The construction operations associated with paving sections of County Road H-58 and constructing the Miners River campground, the new east-end administrative maintenance facility, and possibly a small interpretive center in the Miners area could result in damage to potential archeological sites in the vicinity of the road right-of-way/proposed construction. Before any ground-disturbing activities occurred, surveys would be done to identify the presence of archeological resources in the project area. When possible, identified sites would be avoided and protected to the extent possible, depending on staffing and funding levels. If avoidance was not possible, impacts would be mitigated by recovering site data, which would be done in accord with an archeological data recovery assessment developed in consultation with the state historic preservation officer (see “Mitigation” section). The resultant impacts on sites that could not be avoided would be anticipated to be long term, minor (for sites with low data recovery potential) to moderate (for sites with greater data recovery potential), and adverse.

**Cumulative Impacts.** An archeological site could possibly be disturbed/exposed/impacted by human activity (such as residential development, recreational activities, logging, or artifact hunting) or natural processes (such as erosion or vegetation loss). The possibility of ground disturbance and exposure would be most likely at readily accessible locations such as Miners Beach, Hurricane River, Grand Sable Lake, Little Beaver Lake, and several backcountry locations. The site would be protected to the extent possible, depending on staffing and funding levels. The loss would be mitigated by data recovery (salvage

archeology), which would be done in consultation with the state historic preservation officer (see “Mitigation” section). The resulting impact on such sites would be anticipated to be adverse, long term, and minor (at a site with low data potential) to moderate (at a site with greater data potential). These impacts, combined with the impacts of paving section of H-58 and constructing the east-end administration/maintenance facility, a campground, and possibly a small interpretive center in the Miners area would have a long-term minor to moderate adverse cumulative impact on archeological sites under alternative E.

**Conclusion.** Should sites be identified during surveys of project areas, these site(s) would be protected to the extent possible, depending on staffing and funding levels. When possible, the site would be avoided; if avoidance was not possible, impacts would be mitigated by recovering site data. The overall impacts on sites that could not be avoided would be long-term, minor to moderate (depending on the data recovery potential of the site) adverse impacts.

There would be no impairment of archeological sites.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would result in adverse effects on archeological sites that were disturbed by construction activities and could not be avoided.

#### Historic Structures

Preserving and rehabilitating the Munising Range Light Station; rehabilitating the Sand Point Coast Guard Station and boat house,

and actively interpreting the site and moving some of the adaptive uses to other sites; doing preservation treatment on the ancillary buildings at the Au Sable Light Station; rehabilitating structures at and developing a site plan for the Grand Marais Coast Guard Station; rehabilitating the Grand Marais Harbor of Refuge quarters; and rehabilitating the Abrahamson barn and preserving other structures at the Abrahamson farm would help protect the documented architectural values (in compliance with the *Secretary's Standards for Historic Structures*) of these structures. Historic buildings would be enhanced through rehabilitation of these resources as recommended in the historic structure reports/ plans. Although some historic fabric might be lost during preservation/ rehabilitation efforts, a minor long-term adverse impact (because changes would be minimal), overall there would be a long-term minor to moderate beneficial impact because the structures would be rehabilitated and documented architectural elements and values would be protected.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in alternative E to have a cumulative impact on historic structures.

**Conclusion.** Actions under this alternative would have long-term minor to moderate beneficial impacts on the Munising Range Light Station, Au Sable Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, and the Abrahamson farm because the structures would be rehabilitated and preserved and documented architectural values would be preserved.

There would be no impairment of historic structures.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 "Assessment of Adverse

Impacts") the National Park Service finds that the selection of this alternative would have an adverse impact from the loss of some historic fabric from the preservation/rehabilitation efforts (changes would be minimal). However, overall there would not be an adverse effect because the structures would be preserved from further deterioration and important architectural elements and values would be protected.

### Cultural Landscapes

Restoring the cultural landscape at the Munising Range Light Station; restoring cultural landscape at the Sand Point Coast Guard Station and boat house, actively interpreting the site; and moving some of the adaptive uses to other sites; restoring the cultural landscape at the Au Sable Light Station; restoring the cultural landscape and developing a site plan for the Grand Marais Coast Guard Station; restoring the cultural landscape at the Grand Marais Harbor of Refuge quarters; and restoring the cultural landscape at the Abrahamson and Becker Farms would be a long-term moderate beneficial impact on these important cultural landscapes. Significant elements of the historic scenes would be restored to a reasonable facsimile of their period of historical significance, documented values would be preserved, and noncontributing elements would be removed.

In areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, woody vegetation would encroach, resulting in a more closed-in appearance and eventual change to a more wooded scene. This would result in the loss of landscapes associated with farming or other agricultural activities. The potential loss of some of these remaining landscapes in the national lakeshore would have a minor long-term adverse impact on these cultural landscapes, and relatively few would be left.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in alternative E to have a cumulative impact on cultural landscapes.

**Conclusion.** Restoring the cultural landscapes at the Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson and Becker Farms under this alternative would have long-term, moderate beneficial impacts on the cultural landscapes associated with these sites by preserving their documented values, removing noncontributing elements, and adding other elements reflective of a reasonable facsimile of the cultural landscape's period of significance.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads that are not part of other visitor service areas, resulting in the eventual loss of landscapes associated with farming or other agricultural activities — a minor long-term adverse impact on these cultural landscapes, and relatively few would be left.

There would be no impairment of cultural landscapes.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would not have adverse effects on the cultural landscapes at Munising Range Light Station, the Sand Point and Grand Marais Coast Guard Stations, the Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the Abrahamson Farm.

Woody vegetation would encroach in areas of abandoned agricultural operations, cabin clearings, and abandoned roads, resulting in

the eventual loss of landscapes associated with farming or other agricultural activities — an adverse impact on these cultural landscapes, and relatively few would be left.

### **Ethnographic Resources**

Under alternative E, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from water-based visitor-related activities such as motorboats, and tour boats in the casual recreation prescription. These conflicts would constitute a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional. (Areas where impacts could occur include high cliffs or promontories, river and creek mouths, inland lakes, Lake Superior, and the Grand Sable Dunes.)

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions proposed in alternative E to have a cumulative impact on ethnographic resources.

**Conclusion.** Under this alternative, there would be no project or construction-related ground disturbance with the potential to impact known ethnographic resources.

American Indians desiring privacy for religious activities would be disrupted occasionally by such things as the presence of other visitors who are hiking or camping and noise from water-based visitor-related activities such as motorboats, and tour boats in the casual recreation prescription. These conflicts would constitute a minor, short-term, reoccurring, adverse impact; however, conflicts would only be occasional.

There would be no impairment of ethnographic resources.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse Impacts”) the National Park Service finds that the selection of this alternative would have recurring, occasional, adverse impacts on the ability of American Indians to collect resources for ceremonial and religious purposes or to conduct ceremonies.

### **Museum Collection**

Moving the museum collection to the proposed new administrative headquarters building near Munising would provide long-term major beneficial effects for the preservation the collection because the new repository would meet modern professional standards and would be more accessible to staff and researchers.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would be expected to combine with the actions described above (moving the collection to a repository that meets professional standards) to have a cumulative impact on the museum collection under alternative E.

**Conclusion.** Actions under this alternative would have long-term major beneficial impacts on the preservation of and access to the national lakeshore’s museum collection by staff and researchers because the collection would be housed in a new repository that would meet modern professional standards and would be more accessible to staff and researchers.

There would be no impairment of the museum collection.

**Section 106 Summary.** Under regulations of the Advisory Council on Historic Preservation (36 CFR 800.5 “Assessment of Adverse

Impacts”) the National Park Service finds that the selection of this alternative would not have an adverse effect on the museum collection.

## **IMPACTS ON NATURAL RESOURCES**

### **Species of Concern**

Eliminating vehicle access to the Little Beaver Lake campground and use of motorized boats on Beaver and Little Beaver Lakes could reduce the already low potential for disturbance of bald eagles nesting in this area, a beneficial impact but one that would be difficult to quantify. There would be no change at other nest sites in the lakeshore and no adverse effect would be expected.

Because there would be no change in management of Grand Sable Dunes, Pitcher’s thistle and other species of concern found there, would continue to benefit from the protection afforded by research natural area designation. All species of concern found in the dunes would remain protected and primarily subject to natural changes.

Campground development at Miners Basin would result in a minor increase of human presence and traffic for the long term. However, the increase would be localized and seasonal. The very low density of roads and development in the national lakeshore would have a negligible effect on the gray wolf use in the lakeshore and the central Upper Peninsula (USFWS 1992; MDNR 1997). There would be no appreciable increase in the density of roads, although road improvements, particularly paving of large portions of the primary roads, could result in higher travel speeds. High speeds (about 60 miles per hour) could increase the potential for road fatalities if wolf use coincides with traffic use. The design for H-58 would incorporate elements to provide a design speed of about 35 miles per hour.

The abandonment of two track roads in the Beaver Basin and other areas managed under the primitive prescription would have a negligible effect on species of concern.

**Cumulative Impacts.** In Michigan, endangered species protection applies to all private and public land. The Endangered Species Protection law states that an individual may not harm or take threatened and endangered species (Michigan Natural Resources and Environmental Protection Act 1994, part 365). It is the responsibility of the landowner to submit projects for review to determine if a threatened or endangered species is known to occur or has potential to occur within the project scope. Logging on state land is conducted under these guidelines. ForestLand Group, Limited Liability Corporation management practices address species of concern as identified by the Michigan Department of Natural Resources and the U.S. Fish and Wildlife Service. The overall effect is that species of concern would continue to be afforded protection in the inland buffer zone as well as in the shoreline zone.

Also, the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources conduct active management programs for the gray wolf in the Seney area, a major short- and long-term benefit for this species in the central Upper Peninsula.

Although the policies and laws mentioned above do not guarantee protection, they do serve as more of a deterrent to harming endangered species than without these laws. In combination with federal laws that protect endangered species, overall cumulative effect is that species of concern would continue to be protected in the national lakeshore, a major short- and long-term benefit.

**Conclusion.** As in alternative A, continuing current management practices would perpetuate short- and long-term beneficial impacts for species of concern. Preserving Grand Sable Dunes as a research natural area

would continue to provide a major long-term benefit for species of concern in that area by providing an environment with very limited use or disturbance. There would be no discernable adverse impacts on the bald eagle, pitcher's thistle, the gray wolf, or other species of concern expected if alternative E was implemented. Species occurring north of the inland buffer zone elsewhere in the lakeshore would continue to benefit from federal (NPS) protection. Species on state lands are afforded protection through review and management. Species on corporate and privately owned land are subject to state law and require review by the Michigan Department of Natural Resources to ensure protection. Although these laws and policies do not guarantee protection, they are an added incentive for protecting these species.

There would be no impairment of species of concern.

### Wilderness Resources and Values

The designation of 18,063 acres of land in the Beaver and Chapel Basins as wilderness would preserve in perpetuity the wilderness values these areas have — a major long-term beneficial impact on wilderness values.

Opportunities for solitude and natural quiet would also be improved because tour boats would no longer come as close to shore between Miners Beach and Chapel Beach — a moderate, long-term beneficial benefit.

Reducing the noise from tour boat public address system operations between Miners Castle and Chapel Rock would be a moderate long-term intermittent, beneficial impact on opportunities for solitude and natural quiet. East of Miners Beach tour boats and other motorized boats would be required to stay outside the lakeshore boundary, further reducing the effects of noise from that source.

**Cumulative Impacts.** The addition of Beaver and Chapel Basins as wilderness (18,063 acres) would increase the protection afforded by wilderness designation in the central Upper Peninsula to 54,506 acres (Big Island 6,008 acres, Strangmoor Bog 25,150 acres, and Rock River Canyon 5,285 acres) — a major long-term beneficial cumulative impact on wilderness values.

Logging activity would continue in the inland buffer zone, but the effect on opportunities for solitude and natural quiet would be decreased because logging immediately adjacent to the area proposed for wilderness designation would be discontinued as prescribed in the primitive management prescription — a moderate long-term benefit.

**Conclusion.** Overall, wilderness values would be enhanced more than the preferred alternative because a larger area with wilderness characteristics would be preserved (18,063 acres) — a long-term major benefit. Reducing the noise from tour boat public address system operations between Miners Castle and Chapel Rock would be a moderate long-term intermittent, beneficial impact on opportunities for solitude and natural quiet. However, motorized boat use would be prohibited within the 0.25-mile-wide portion of Lake Superior from Miners Beach to the mouth of Spray Creek. This would remove much of the noise from motorized boats — a long-term moderate beneficial impact on opportunities for solitude and natural quiet, and other wilderness values. The total area of wilderness in the central Upper Peninsula would increase by about 33% — a major, long-term, beneficial impact for those who desire that kind of experience.

There would be no impairment of wilderness resources or values from actions proposed under this alternative.

## **IMPACTS ON SOCIOECONOMIC RESOURCES (LOCAL ECONOMY AND COUNTY TAX BASE)**

Alternative E outlines a variety of development and restoration projects (construction of Miners campground and trails, the east-end administration/maintenance facility, and possibly a small interpretive center; paving sections of H-58 and other access roads; and partial landscape restoration at the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, Au Sable Light Station, the Munising Range Light Station, and the Abrahamson Farm) to be accomplished over the life of this plan. There would be some benefits from expenditures of about \$37 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative. This economic activity would occur over time as various projects are phased in and others are completed. How much the Alger County economy actually benefits would depend upon the degree to which national lakeshore needs are fulfilled within and by the local businesses.

Some potential tour boat riders might feel that being close to the pictured rocks (the primary attraction) but farther (0.25 mile) from the shore between Miners Beach and Chapel Beach would have little influence on their decision to ride the tour boat. Others might choose not to take the tour because the boat would be prohibited from operating as close to the shore in that area as it has in the past (less than 0.25 mile). If this changed affected the popularity of the tours so that the economic viability of the operation suffered, the tours might be discontinued altogether, a major adverse long-term impact on the tour operators.

The national lakeshore would remain a part of the local socioeconomic environment. NPS expenditures for goods, services, and staff would continue to benefit the local economy. Visitors would still be attracted to the county because of the national lakeshore, and their spending patterns would continue to contribute to the area's economy. The actions proposed in alternative E would be expected to result in short-term beneficial impacts on income, earnings, employment, and unemployment. There are no indications that the actions and effects of this alternative would result in any long-term impacts on the major socioeconomic indicators (population, income, earnings, employment, unemployment, and poverty) in Alger County.

**Cumulative Impacts.** Development projects in the national lakeshore combined with ongoing activities in the construction sector outside the national lakeshore would contribute short-term expenditures over the life of the plan that would be a minor beneficial cumulative impact that would primarily affect the construction industry.

**Conclusion.** Overall, the long-term benefits of implementing this alternative would be minor to moderate when compared to the overall economy of the predominantly rural Alger County. There would be some benefits from expenditures of about \$37 million in life-cycle costs (estimated for a 25-year period), which would benefit the overall Alger County economy. There would be some moderate to major short-term benefits for some individuals (mostly in the construction industry) from increased business and employment opportunities related to lakeshore projects proposed in this alternative (such as construction of Miners campground and trails, the east-end administration/ maintenance facility, and possibly a small interpretive center; paving sections of H-58 and other access roads; and partial landscape restoration at the Sand Point and Grand Marais Coast Guard Stations, the Grand Marais Harbor of Refuge quarters, Au Sable Light Station, the Munising

Range Light Station, and the Abrahamson Farm). The operations of the national lakeshore would be a continuing long-term, beneficial contribution to the local economy.

If the restriction on tour boats operating closer than 0.25 mile from the shore between Miners and Chapel Beaches affected the tour's popularity and the economic viability of the operation suffered, tours might be discontinued, which would be a major, adverse, long-term impact on tour operations.

## IMPACTS ON VISITOR USE AND EXPERIENCE

### Opportunities for Recreational Activities

There would be many changes in opportunities for recreational activities compared to the no-action alternative. Motorboats would no longer be allowed on the Beaver Lakes because Beaver Basin would be managed under the primitive prescription. Between the east end of Miners Beach and the mouth of Sevenmile Creek, the 0.25-mile strip of Lake Superior within the national lakeshore (about 18 miles) would be managed under the primitive prescription. This means that motorized boats (including commercial tour boats) would no longer be permitted to use these waters. The *Superior*, a shipwreck near Spray Falls that is often visited by scuba divers, would become inaccessible to motorized dive boats.

Eliminating motorboats on the Beaver Lakes, eliminating motorized boats, including commercial tour boats, from the 0.25-mile strip between the east end of Miners Beach and the mouth of Sevenmile Creek, and making the *Superior* shipwreck near Spray Falls inaccessible to motorized dive boats would have a major adverse impact on the visitor experience.

A new drive-in campground and trails at the Miners area would result in additional

opportunities for visitors seeking those kinds of experiences — a long-term benefit. However, hikers in the Miners area might encounter more hikers than in the no-action alternative, a minor adverse impact.

Opportunities for touring and learning about historic resources would be improved by rehabilitation/restoration/preservation measures and other improvements at the Munising Range Light Station, Sand Point and Grand Marais Coast Guard Stations, Au Sable Light Station, the Grand Marais Harbor of Refuge quarters, and the historic farm area. These additional or improved recreational opportunities would have a major beneficial impact on the visitor experience.

Opportunities for a primitive driving experience leading to primary national lakeshore features could be reduced if the country paves two stretches of County Road H-58 as recommended, a moderate adverse impact over the long term on visitors seeking this kind of experience. There could be a moderate beneficial impact on those not wanting a primitive driving experience.

Several additional unpaved and primitive driving opportunities would be lost in alternative E. Closing Little Beaver Lake road and the Beaver Basin overlook road to motor vehicles and closing two track roads that are now open to the public in areas managed as primitive, such as Chapel Basin and Beaver Basin (see alternative E map) would have a moderate long-term adverse impact on visitor experiences. However, converting what are now Little Beaver Lake road and Beaver Basin overlook road to hiking trails after closing them to motor vehicles would have a moderate long-term beneficial impact for hikers.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative

impacts on opportunities for recreational opportunities under this alternative.

**Conclusion.** Impacts on recreational opportunities would be mixed and long term. Loss of motorboating opportunities on the Beaver Lakes and for 0.25 mile of Lake Superior between Miners Beach and the mouth of Sevenmile Creek would have a long-term major adverse impact. Additional or improved recreational opportunities (a new campground and hiking opportunities and opportunities to tour historic resources) would have a major beneficial impact. Additional hiking opportunities in Beaver Basin and along Little Beaver Lake road would have a moderate beneficial impact.

#### **Access to Primary National Lakeshore Features**

If, as recommended, the county paves County Road H-58 throughout the national lakeshore, a few national lakeshore features such as Au Sable Light Station and Log Slide would be somewhat easier to get to — a minor beneficial impact on the visitor experience. Converting Little Beaver Lake and Beaver Basin overlook access roads to hiking trails would make it more difficult for some visitors to get to these features, resulting in a minor reduction of motorized access to national lakeshore features but a long-term beneficial impact on hikers. Features with improved access would probably get more visitors and could be crowded at times, a minor long-term adverse impact.

An 18-mile stretch of Lake Superior (0.25 mile wide) would be managed under the primitive prescription, and would be off-limits to motorboats except in an emergency or when human safety was threatened. Although commercial tour boats could continue, people on the tours would not see the shoreline or cliffs nearly as well as in the no-action alternative because the vessels would have to stay 0.25 mile from shore. If this change affected the

popularity of the tours so that the economic viability of the operation suffered, the tours might be discontinued altogether, a major long-term adverse impact on the tour operators. Commercial kayak tours, which provide good views of the cliffs from the water, would experience a minor long-term beneficial impact from the removal of motorized boats in the primitive prescription. Nonetheless, up to 37,000 people per year could lose an opportunity to get good views of the cliffs and beaches from a tour boat, a major long-term adverse impact on the visitor experience.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on access to primary national lakeshore features under this alternative.

**Conclusion.** Impacts on motorized access to primary features would be mostly adverse and long term. Notably, the opportunity to get close-up (less than 0.25 mile) views of cliffs and beaches from Miners Beach to Chapel Beach from a tour boat or other motorboat would be lost, a major adverse impact. If this change affected the popularity of the tours so that the economic viability of the operation suffered, the tours might be discontinued altogether, a major long-term adverse impact on visitors. Commercial kayak tours, which provide good views of the cliffs from the water, would experience a minor long-term beneficial impact from the removal of motorized boats in the primitive prescription.

## Noise

Noise from snowmobiles, motorboats, and chainsaws would have a long-term, moderate adverse impact on the visitor experience in much of the national lakeshore unless ways to reduce or muffle the sounds were implemented. Because of modifications to the tour boat public address system, noise would

be reduced from the west boundary to Chapel Beach — a moderate, long-term, beneficial, intermittent impact. Noise from motorized boats on Lake Superior within 0.25 mile of the shore would be reduced in the central portion of the national lakeshore (near Beaver Basin), with users of shoreline and beach areas benefiting most. Motorboat noise would be eliminated on the Beaver Lakes (managed as the primitive prescription). Compared to the no-action alternative these changes would have a long-term minor beneficial impact on visitors who find such noise undesirable because the current 10-horsepower restriction produces only low noise levels.

Reduced noise from the tour boat public address system would have a *moderate*, long-term, intermittent beneficial impact on the visitor experience for visitors who find such noise undesirable.

Eliminating motorboats on the Beaver Lakes and converting Little Beaver Lake road to a hiking trail would eliminate these sources of noise and would have a long-term minor beneficial impact.

**Cumulative Impacts.** Noise outside of the national lakeshore is primarily from personal watercraft outside the 0.25-mile boundary near the east and west ends of the national lakeshore, chainsaws associated with logging activities adjacent to the inland buffer zone, and snowmobiles in the winter along County Road H-58. These activities produce generally short-term, minor to moderate adverse impacts (depending on proximity to the noise source and setting). There are also occasional noise sources within the national lakeshore — the tour boat public address system (which would be reduced under this alternative), snowmobiles and vehicles on roads in the national lakeshore, and chainsaws used for logging in the inland buffer zone. These disruptions, in combination with the noise sources mentioned above that are outside the national lakeshore, would result in continuing adverse short-term minor to moderate

(depending on proximity to the noise source and setting) cumulative impacts on the natural quiet of the national lakeshore.

**Conclusion.** Alternative E would have long-term beneficial impacts related to reducing man-made noise in the national lakeshore. Boat noise would be reduced along 18 miles (from Miners Beach to the mouth of Seven-mile Creek) of the shoreline and adjacent areas, resulting in a moderate long-term beneficial impact on the visitor experience. Reduced noise from the modified tour boat public address system from the west boundary to Chapel Beach would be a long-term, moderate, beneficial, intermittent impact on people looking for a quiet experience. Reduced motorboat and vehicle noise near Beaver Lakes would also have a minor beneficial impact.

#### **Scenic Character of County Road H-58**

Efforts should be made to maintain characteristics that visitors say contribute to the County Road H-58's scenic character. However, if it is upgraded by the county as recommended under this alternative, some loss of these characteristics would be unavoidable and would result in a moderate long-term adverse impact on the visitor experience.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on the scenic character of County Road H-58 under this alternative.

**Conclusion.** If undertaken by the county as recommended under this alternative, changes to County Road H-58 would have moderate long-term adverse impacts on its scenic character.

#### **Opportunities for People with Disabilities**

Outdoor lakeshore attractions that are accessible to visitors with disabilities would remain as they currently exist under this alternative except that Little Beaver Lake would no longer be accessible to disabled visitors and a new campground at Miners would be accessible to disabled visitors. This new campground would provide additional options for visitors who are not able to use backcountry campgrounds. The Grand Marais Coast Guard Station would be a new day use area that is accessible to visitors with disabilities. Compared to the no-action alternative, these measures would have a minor long-term beneficial impact on disabled visitors.

Moving the headquarters function from Sand Point to a new administration building (accessible to people with disabilities) near the Munising maintenance facility and consolidating the east-end lakeshore administrative and maintenance functions in a new facility (also accessible to people with disabilities) near Grand Marais would be a major beneficial impact on disabled lakeshore staff and other disabled persons needing to conduct business in the national lakeshore.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on people with disabilities under this alternative.

**Conclusion.** Under this alternative, Little Beaver Lake would no longer be accessible to visitors with disabilities, the new campground at Miners would be accessible to visitors with disabilities, and Coast Guard Point would be a new day use area that is accessible to visitors with disabilities. Compared to the no-action alternative, these measures would have a minor long-term beneficial impact on disabled visitors.

Moving the headquarters function to a new administration building (accessible to people with disabilities) near Munising and consolidating administrative and maintenance in a new facility (also accessible to people with disabilities) near Grand Marais would have a major long-term beneficial impact on staff and others with disabilities who might need to conduct business in the national lakeshore.

### IMPACTS ON NATIONAL LAKESHORE OPERATIONS

Consolidating national lakeshore operations in new facilities that meet NPS standards at both ends of the national lakeshore would improve operational efficiency and provide a long-term moderate benefit.

There would be a minor long-term benefit to (decrease in) emergency response times in those portions of the lakeshore if the county paves H-58 (the primary access route to the central and eastern portions of the national lakeshore) as recommended under this alternative. The road would still be a slow-speed road by design.

Precluding national lakeshore staff use of motorboats within national lakeshore waters adjacent to the proposed wilderness (a stretch of about 18 miles), except in emergencies would have a minor adverse impact on the operational efficiency of the national lakeshore staff.

Administrative access to the Beaver Lakes area would change from motorized access to hiking access because Little Beaver Lake Road would be closed and converted to a hiking trail. This would affect routine maintenance and resource management activities as well as emergency response (motorized access is allowed for emergencies, however conversion from road to trail might restrict the size of vehicle that could be accommodated) – a minor adverse impact on the operational efficiency of the national lakeshore staff.

There would be no change in, and thus no new impacts on, access to the Chapel area.

Developing a new drive-in campground would have a minor long-term adverse impact on enforcement staff who would have another site to patrol.

**Cumulative Impacts.** No past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts just described, result in cumulative impacts on national lakeshore operations under this alternative.

**Conclusion:** The impacts of alternative E on national lakeshore operations would be mixed. The proposed consolidated operations facilities would increase efficiency – a long-term moderate benefit.

If changes are made by the county as recommended, improving H-58 would improve emergency response times in some areas, a minor long-term benefit.

Precluding staff use of motorboats within national lakeshore waters adjacent to the proposed wilderness (about 18 miles) except in emergencies would have a minor adverse impact on the operational efficiency of the national lakeshore staff.

Changes to mode of access would have a minor adverse impact on national lakeshore operations in Beaver Basin. Altogether, changes in mode of access would have a moderate long-term adverse impact on the operational efficiency of the national lakeshore staff.

### UNAVOIDABLE ADVERSE IMPACTS

The following discussion identifies impacts on resources associated with the implementation of this alternative. These impacts have been identified as being unavoidable, moderate to major, and adverse.

Some archeological sites adjacent to construction or that are easily accessible would be subject to disturbance.

Restricting motorized boats east of Miners Beach could result in a major loss of revenue for tour boat operations and a missed opportunity for most visitors to see the Pictured Rocks cliffs.

Converting the Little Beaver Lake Road to a trail would reduce access to the Beaver Lakes.

Closing Little Beaver Lake and the Beaver Basin overlook access roads would reduce opportunities for a primitive driving experience and preclude visitors with disabilities.

The management of the offshore waters as primitive would prohibit access by motorboats between Miners Beach and the mouth of Sevenmile Creek (where wilderness extends 0.25 mile offshore into Lake Superior).

Improvements to County Road H-58 in the lakeshore would change its scenic quality from a primitive road to a rural highway experience between Grand Sable Lake and Log Slide resulting in loss in extended primitive driving experiences.

## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The irretrievable and irreversible commitments of resources that are associated with this alternative are summarized below. Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term (e.g., the regrowth of an old-growth forest). Irretrievable commitments are those that are lost for a period of time (e.g., if a road is constructed, the vegetative productivity is lost for as long as the highway remains).

There would be no irreversible and irretrievable commitments of resources under this alternative.

## **RELATIONSHIP OF SHORT-TERM USES AND LONG-TERM PRODUCTIVITY**

This section discusses the effects of the short-term use of resources in this alternative on the long-term productivity of the resources.

There would be no adverse effects on biological or agricultural productivity associated with implementing alternative E.

Economic productivity would be reduced proportional to the contribution of Pictured Rocks Tours to the local economy.



Chapter 5

.....  
**CONSULTATION  
AND  
COORDINATION**





## PLANNING PROCESS AND HISTORY OF PUBLIC INVOLVEMENT FOR THIS PROJECT

### SUMMARY OF PUBLIC INVOLVEMENT

In the summer of 1999 the public was notified of the Pictured Rocks general management plan effort by means of *Newsletter 1* and announcements in the media. Part of the framework for the plan (and the first task for the planning team) was to reaffirm the purpose, significance, and mission for the national lakeshore. In *Newsletter 1* the public was asked to review the lakeshore's purpose, significance, and mission statements. The first newsletter also asked the public to comment on a list of preliminary topics and issues to be addressed in the plan (also see appendix F).

Nearly 300 written comments were received in response to *Newsletter 1*. Additional comments were provided by people who attended a series of public scoping meetings held in August and September 1999 in Novi, Grand Rapids, Grand Marais, and Marquette, Michigan and in Green Bay, Wisconsin. The rest of the national lakeshore staff (those not on the planning team) were introduced to the planning process, and their comments were solicited as part of the planning process.

*Newsletter 2*, issued in November 1999, provided information on several topics. It summarized public response to the first newsletter and announced that a wilderness study would be prepared as part of the general management plan. It presented draft general management plan "decision points," which are the key questions the plan needs to answer. It also introduced and asked for public input on management prescriptions, which identify a range of ways to manage resources and provide for different experiences in the national lakeshore. More than 250 comments were received in response to *Newsletter 2*.

The results of the public responses to *Newsletter 2* were summarized in May 2000 in *Newsletter 3*. This newsletter also presented revised management prescriptions and five draft alternative concepts. In June 2000 public meetings were held in Lansing, Grand Marais, and Wetmore, Michigan to provide another way for the public to learn about the alternatives, ask questions about them, and share ideas with the planning team. A total of 107 persons attended the meetings, and more than 500 written responses were received. Using input from the public and considering the probable environmental consequences and costs of the alternatives, the planning team developed a preferred alternative. A *Draft Pictured Rocks National Lakeshore General Management Plan and Wilderness Study Environmental Impact Statement* was produced and distributed for public review.

All newsletters and draft documents are also available on-line at  
[www.nps.gov/piro/gmpudat.htm](http://www.nps.gov/piro/gmpudat.htm).

### CONSULTATION

In accordance with Section IV of the 1995 programmatic agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, certain undertakings require only internal NPS review for Section 106 purposes. Other undertakings require standard Section 106 review in accordance with 36 CFR 800, and in those instances the National Park Service consults as necessary with the state historic preservation officer, the Advisory Council on Historic Preservation, tribal officials, and other interested parties.

NPS staff met with Mr. Eugene Big Boy, Tribal Chairman of the Bad River Band (Wisconsin)

of the Lake Superior Ojibwa Tribe. There are about 1,500 members of the tribe on the reservation and some 7,000 nationwide. Mr. Big Boy did not have any immediate concerns and expressed interest in keeping informed of planning for the general management plan and other activities within the Pictured Rocks National Lakeshore.

Other affiliated tribes were contacted via letter and phone calls but did not elect to meet with national lakeshore staff. No comments were received.

In accordance with the Endangered Species Act, the National Park Service consulted with the U.S. Fish and Wildlife Service and Michigan Department of Natural Resources regarding species known or potentially occurring in the national lakeshore.

#### **LIST OF AGENCIES AND ORGANIZATIONS RECEIVING A COPY OF THE DRAFT PLAN**

##### **Federal Agencies**

Advisory Council on Historic Preservation  
Army Corps of Engineers  
Bureau of Indian Affairs  
Bureau of Land Management  
Environmental Protection Agency  
Federal Highway Administration  
International Joint Commission  
National Park Service  
    Washington Office  
    Midwest Regional Office  
    Isle Royale National Park  
    Sleeping Bear Dunes National Lakeshore  
    Keweenaw National Historical Park  
Ontario Ministry of Natural Resources  
    Pukaskwa National Park  
US Fish & Wildlife Service  
    Seney National Wildlife Refuge  
US Forest Service  
    Hiawatha National Forest  
    Grand Island National Recreation Area  
US Geological Survey

USDA-Natural Resources Conservation Service  
USGS-Biological Resources Division

##### **Tribes**

Bay de Noc Indian Cultural Association  
Bay Mills Indian Community  
Bay Mills Tribe  
Bad River Tribal Council  
Forest County Potawatomi Tribal Office  
Grand Traverse Band of Ottawa & Chippewa  
Hannahville Indian Community  
Keweenaw Bay Band  
Keweenaw Bay Indian Community  
Lac Courte Oreilles Governing Board  
Lac du Flambeau Tribal Council  
Lac Vieux Desert Band of Lake Superior Chippewa  
Menominee Indian Tribe  
Red Cliff Tribal Council  
Saginaw Chippewa Indian Tribe  
Sault Tribe of Chippewa Indians  
Sokaogon Chippewa Community  
Sokaogon Chippewa Tribal Office  
St Croix Tribal Council  
Stockbridge Munsee Tribal Council  
Wisconsin Winnebago Tribal Office

##### **US House of Representatives/Senate**

The Honorable Bart Stupack, U.S. House of Representatives  
The Honorable Carl Levin, U.S. Senate  
The Honorable Debbie Stabenow, U.S. Senate

##### **Michigan House of Representatives/Senate**

The Honorable Michael Prusi, Michigan Senate, district #38  
The Honorable Stephen F. Adamini, Michigan House, district 109

##### **State Agencies**

The Honorable Jennifer Granholm, Michigan Governor  
Michigan Department of Environmental Quality  
Michigan Department of Natural Resources  
Michigan Department of State  
Michigan Department of Transportation  
Michigan Air National Guard

Michigan Environmental Council  
Michigan Welcome Center  
Minnesota Department of Natural Resources  
State of Michigan

**City/Township/County Agencies**

Alger Chamber of Commerce  
Alger Conservation District  
Alger County Board of Commissioners  
Alger County Clerk  
Alger County Planning Commission  
Alger County Sheriff's Dept  
Alger Parks & Recreation Dept  
Altran  
AuTrain Township  
Burt Township Planning & Zoning  
Commission  
Burt Township Public School  
Burt Township Supervisor  
Central U.P. Planning & Development  
Commission  
Eastern U.P. Community Assistance Tech  
Council  
Grand Island Township  
Limestone Township  
Marquette Co Soil Conservation District  
Mathias Township  
Munising City Manager  
Munising Township  
Munising Township Board  
Onota Township  
Rock River Township  
Upper Great Lakes Regional Commission

**Organizations**

Alger County Historical Society  
Alger County Kiwanis  
Alger County Promotional Committee  
Alger County Sportsman Club  
Alger Snowmobile Association  
Alger Underwater Preserve  
American Legion Post 131  
Audubon Council Minnesota  
Audubon Society - Laughing Whitefish  
Chapter  
Audubon Society - Northeast Wisconsin  
Bear Hunters Association  
Capitol Area Audubon Society  
Central Lake Superior Watershed Partnership

Central U.P. Sportfishing Association  
Central U.P. Sportsmen Association  
Champion International Corporation  
Circle Michigan  
Coalition for Canyon Preservation  
Degraff Nature Center  
Delta County Chamber of Commerce  
Dickinson County Chamber of Commerce  
Discovering Michigan  
Ducks Unlimited  
Grand Island Lodge 422, Masonic Lodge  
Grand Marais Chamber of Commerce  
Greater Ishpeming Chamber of Commerce  
Great Lakes Cruising Club  
Great Lakes Indian Fish & Wildlife  
Commission  
Great Lakes Lighthouse Keepers Association  
Great Lakes Natural Resources Center  
Great Lakes Sea Kayak Club  
Great Lakes Sea Kayakers  
Great Lakes Shipwreck Museum  
Great Lakes Sport Fishing Council  
Great Lakes Sports Fishermen Inc  
Headwaters Environmental Station  
Izaak Walton League  
Kalamazoo Nature Center  
Little Traverse Conservancy  
Loyal Order of the Moose  
Marines of Munising  
Marquette Area Chamber of Commerce  
Marquette County League of Women Voters  
Menominee Chamber of Commerce  
Michigan Association of Conservation  
Districts  
Michigan Association of Timbermen  
Michigan Audubon Society  
Michigan Bearhunter's Association  
Michigan Bow Hunters Association  
Michigan Chamber of Commerce  
Michigan Loon Preservation Society  
Michigan Natural Areas Council  
Michigan Natural Features Inventory  
Michigan Nature Association  
Michigan Sharp-tailed Grouse Association  
Michigan Snowmobile Association  
Michigan Trailfinders Club  
Michigan Trappers Association  
Michigan United Conservation Clubs  
Michigan Waterfowl Association

Michigan Wildlife Habitat Foundation  
Moosewood Nature Group  
Munising Council – Knights of Columbus  
2804  
Munising Lioness Club  
Munising Lions Club  
Munising Memorial Hospital Auxiliary  
Munising Rotary Club  
Munising Senior Citizens Club, Inc  
Munising Visitors Bureau  
National Federation of Federal Employees  
National Parks & Conservation Association  
Natural Areas Association  
Newberry Area Chamber of Commerce  
North Country National Scenic Trail  
Association  
North Country National Scenic Trail Hikers  
Northeast Michigan Consortium  
Oakland Audubon Society  
Oneida Business Committee  
Paradise Area Chamber of Commerce  
Rails to Trails Conservancy  
Ruffed Grouse Society  
Sault Ste. Marie Chamber of Commerce  
Schoolcraft Co Chamber of Commerce  
Sierra Club  
Sigurd Olson Environmental Institute  
Skylane Pictured Rocks  
Snell Environmental Group  
Society of American Foresters  
St. Ignace Area Chamber of Commerce  
Superior Scenic Drive Committee  
Superiorland Fish & Game Club  
The Nature Conservancy  
Timber Products Michigan  
Travel Michigan, MEDC  
Trout Unlimited - Michigan State Council  
Trout Unlimited  
Trust for Public Lands  
U.P. Bear Houndsmen  
U.P. Catholic  
U.P. Whitetails Association Inc  
Upper Peninsula Environmental Coalition  
Upper Peninsula Highway Coalition  
Upper Peninsula Travel & Recreation Assn.  
Vietnam Veterans Association Chapter 237  
West Shore Snowmobile Council  
Wetmore Community Club  
White Water Associates Inc

Whitefish Point Bird Observatory  
Wilderness Society  
Wildlife Unlimited of Delta County

**Local Businesses**

BayWatch Resort  
Camel Riders Resort  
Curly's Hilltop Grocery  
Das Gift Haus  
Forest Glen Resort  
ForestLand Group, Limited Liability  
Corporation  
Hiawatha Log Homes  
Mead Corporation  
Melstrand General Store  
Munising Pro Sports  
Pictured Rocks Cruises  
Robinsons Grocery  
Shelter Bay Forests  
Shingleton Oil Co  
Shipwreck Tours  
Trenary Home Bakery  
Wandering Wheels Campground  
White Fawn Lodge

**Media**

Action Shopper News  
Associated Press  
Boat U.S. Reports  
Booth Newspapers  
Capitol Times  
Chicago Tribune  
Daily Globe  
Daily Mining Gazette  
Delta Reporter  
Detroit Free Press  
Detroit News  
Escanaba Daily Press  
Evening News  
Grand Marais Gazette  
Grand Marais Pilot  
Grand Rapids Press  
Green Bay Press Gazette  
Iron Mountain News  
Iron River Reporter  
Lake Superior Magazine  
Lansing State Journal  
Manistique Pioneer  
Marinette Eagle-Star

Marquette Monthly  
Michigan Boat & Travel  
Michigan Snowmobiler  
Milwaukee Journal  
Milwaukee Sentinel  
Mining Journal  
Munising News  
Newberry News  
North Woods Call  
Porcupine Press  
WBAY-TV  
WDBC-WYKX  
WFRV-TV  
WGLQ  
WHCH-WQXO  
Wheels Cycle & Sport  
WHWL  
WJPD-WDMJ-WIAN  
WLUC-TV  
WLUK-TV  
WMQT  
WNBY  
WRUP-WFXD  
WSOO News  
WTIQ

**Education**

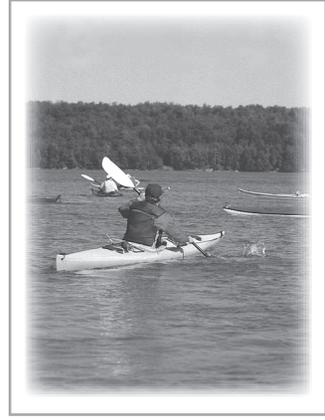
AuTrain Onota Public School  
Bay de Noc Community College  
Central Elementary School  
Delta Schoolcraft ISD  
Lake Superior State University  
Marquette-Alger ISD  
Mather Middle School  
Michigan State University  
Michigan Tech University  
MSU Extension  
Munising Baptist School

Munising High School  
Munising Public Schools  
Northern Michigan University  
Ohio University, Athens, Ohio  
Okemos Montessori/Radmoor School  
Seventh Day Adventist School  
Superior Central Public Schools  
University of Michigan  
University of Minnesota  
University of Pittsburgh  
University of Rochester  
University of Wisconsin  
University of Wisconsin - CPSU  
Utah State University

**Libraries**

Blue Water Library  
Brown County Public Library  
Detroit Public Library  
Gogebic Community College Library  
Grand Marais Public Library  
Grand Rapids Public Library  
Kent County Library  
Lansing Public Library  
Lenawae County Public Library  
Library of Michigan  
Macomb Library  
Mideastern Michigan Library  
Munising Public Library  
Muskegon County Library  
Novi Public Library  
Oakland County Library  
Peter White Public Library  
Superiorland Library Cooperative  
Traverse Area District Library  
Washtenaw Public Library  
Wayne Public Library





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**APPENDIXES,  
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APPENDIX A: LEGISLATION

922

PUBLIC LAW 89-668—OCT. 15, 1966

[80 STAT.

Public Law 89-668

October 15, 1966  
[H. R. 8678]

AN ACT

To establish in the State of Michigan the Pictured Rocks National Lakeshore, and for other purposes.

Pictured Rocks  
National Lake-  
shore, Mich.  
Establishment.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That, in order to preserve for the benefit, inspiration, education, recreational use, and enjoyment of the public a significant portion of the diminishing shoreline of the United States and its related geographic and scientific features, the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized to take appropriate action, as herein provided, to establish in the State of Michigan the Pictured Rocks National Lakeshore.

Publication in  
Federal Register.

SEC. 2. The area comprising that particular land and water depicted on the map identified as "Proposed Pictured Rocks National Lakeshore, United States Department of the Interior, National Park Service, Boundary Map, NL-PR-7100A, July 1966", which is on file and available for public inspection in the office of the National Park Service of the Department of the Interior, is hereby designated for establishment as the Pictured Rocks National Lakeshore. An exact copy of such map shall be filed for publication in the Federal Register within thirty days following the date of enactment of this Act.

SEC. 3. As soon as practicable after the date of enactment of this Act and following the acquisition by the Secretary of an acreage within the boundaries of the area which in his opinion is efficiently administrable for the purposes of this Act, he shall establish the Pictured Rocks National Lakeshore by publication of notice thereof in the Federal Register.

Pictured Rocks  
National Lake-  
shore Advisory  
Commission.

SEC. 4. (a) There is hereby established a Pictured Rocks National Lakeshore Advisory Commission. Said commission shall terminate ten years after the date the lakeshore is established pursuant to this Act.

(b) The commission shall be composed of five members, each appointed for a term of two years by the Secretary, as follows:

(1) Two members to be appointed from recommendations made by the county in which the lakeshore is situated;

(2) Two members to be appointed from recommendations made by the Governor of the State of Michigan; and

(3) One member to be designated by the Secretary.

(c) The Secretary shall designate one member to be chairman. Any vacancy in the commission shall be filled in the same manner in which the original appointment was made.

(d) Members of the commission shall serve without compensation as such. The Secretary is authorized to pay the expenses reasonably incurred by the commission in carrying out its responsibilities under this Act on vouchers signed by the chairman.

(e) The Secretary or his designee shall, from time to time, consult with the commission with respect to the matters relating to the development of the Pictured Rocks National Lakeshore.

SEC. 5. In administering the lakeshore the Secretary shall permit hunting and fishing on lands and waters under his jurisdiction in accordance with the applicable laws of the United States and of Michigan. The Secretary, after consultation with the Michigan Department of Conservation, may designate zones and establish periods where and when no hunting shall be permitted for reasons of public safety, administration, or public use and enjoyment. The Secretary shall, after consultation with such department, issue regulations, consistent with this section, as he may determine necessary to carry out the purposes of this section.

Hunting and fishing.

SEC. 6. (a) The administration, protection, and development of the Pictured Rocks National Lakeshore shall be exercised by the Secretary, subject to the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented, relating to the areas administered and supervised by the Secretary through the National Park Service; except that authority otherwise available to the Secretary for the conservation and management of natural resources may be utilized to the extent he finds such authority will further the purposes of this Act.

Administration.

(b) In the administration, protection, and development of the lakeshore, the Secretary shall prepare and implement a land and water use management plan, which shall include specific provision for—

(1) development of facilities to provide the benefits of public recreation, including a scenic shoreline drive;

(2) protection of scenic, scientific, and historic features contributing to public enjoyment; and

(3) such protection, management, and utilization (subject to the provisions of sections 9 and 10 of this Act) of renewable natural resources, including forage and forest products, as in the judgment of the Secretary is consistent with, and does not significantly impair public recreation and protection of scenic, scientific, and historic features contributing to public enjoyment.

SEC. 7. Nothing in this Act shall be construed as prohibiting any governmental jurisdiction in the State of Michigan from assessing taxes upon any interest in real estate retained under the provisions of section 11 of this Act to the owner of such interest.

SEC. 8. (a) The Secretary is authorized, subject to the limitations, conditions, and restrictions imposed by this Act, to acquire the land, water, and other property, and improvements thereon, and any interests therein (including easements) within the boundary described in section 2 of this Act by donation, purchase with donated or appropriated funds, transfer from any Federal agency, exchange, or condemnation; except that such authority to acquire by condemnation shall be exercised only in the manner and to the extent specifically authorized in this Act.

Acquisition of property, etc.

(b) In exercising his authority to acquire property under this Act, the Secretary shall give immediate and careful consideration to any offer made by an individual owning property within the lakeshore to sell such property to the Secretary. In considering any such offer, the Secretary shall take into consideration any hardship to the owner which might result from any undue delay in acquiring his property.

(c) Any property or interests therein, owned by the State of Michigan, or any political subdivisions thereof, may be acquired only by donation. Notwithstanding any other provision of law, any Federal property located within such area may, with the concurrence of the agency having custody thereof, be transferred without consideration to the administrative jurisdiction of the Secretary for use by him in carrying out the provisions of this Act.

(d) The Secretary shall make every reasonable effort to acquire property through negotiation and purchase. Where agreement is not reached and condemnation proceedings are filed, the owner of such property shall be paid the fair market value thereof as determined in such proceedings.

(e) Nothing in this Act shall be construed to prohibit the use of condemnation as a means of acquiring a clear and marketable title, free of any and all encumbrances.

(f) In exercising his authority to acquire property by exchange the Secretary may accept title to any non-Federal property within the area designated by section 2 of this Act for inclusion in the lakeshore, and in exchange therefor he may convey to the grantor of such property any federally owned property under his jurisdiction within the State of Michigan which he classifies as suitable for exchange or other disposal. The values of the properties so exchanged either shall be approximately equal or, if they are not approximately equal, the values shall be equalized by the payment of cash to the grantor or to the Secretary as the circumstances require.

Preservation of shoreline, etc.

SEC. 9. (a) The area hereinafter described in subsection (b) of this section is hereby established as an inland buffer zone in order to stabilize and protect the existing character and uses of the lands, waters, and other properties within such zone for the purpose of preserving the setting of the shoreline and lakes, protecting the watersheds and streams, and providing for the fullest economic utilization of the renewable resources through sustained yield timber management and other resource management compatible with the purposes of this Act.

"Inland buffer zone."

(b) As used in this Act, the term "inland buffer zone" means that part of the lakeshore delineated as such on the map identified as "Proposed Pictured Rocks National Lakeshore, United States Department of the Interior, National Park Service, Boundary Map, NL-PR-7100A, July, 1966". The Secretary shall file the map with the Office of the Federal Register, and it may also be examined in the Offices of the Department of the Interior.

Boundary map, filing with Federal Register.

SEC. 10. The Secretary shall be prohibited from acquiring by condemnation any (1) improved property within the inland buffer zone, or (2) property within the inland buffer zone during all times when, in his judgment, such property is being used (A) for the growing and harvesting of timber under a scientific program of selective cutting and forest management, or (B) for commercial purposes, if such commercial purposes are the same such purposes for which such property is being used on December 31, 1964, so long as the use of such improved or other property would further the purposes of this Act and such use does not impair the usefulness and attractiveness of the lakeshore.

"Improved property."

(b) As used in this Act, the term "improved property" shall mean any one-family dwelling on which construction was begun before December 31, 1964, together with so much of the land on which the

dwelling is situated (such land being in the same ownership as the dwelling) as shall be reasonably necessary for the enjoyment of the dwelling.

SEC. 11. (a) Any owner or owners of improved property on the date of its acquisition by the Secretary may, as a condition to such acquisition, retain, for a term of not to exceed twenty-five years, or for a term ending at the death of such owner or owners, the right of use and occupancy of such property for any residential purpose which is not incompatible with the purposes of this Act or which does not impair the usefulness and attractiveness of the area designated for inclusion. The Secretary shall pay to the owner the value of the property on the date of such acquisition, less the value on such date of the right retained by the owner. Where any such owner retains a right of use and occupancy as herein provided, such right during its existence may be conveyed or leased for noncommercial residential purposes in accordance with the provisions of this section.

Noncommercial  
residency provi-  
sions.

(b) Any deed or other instrument used to transfer title to property, with respect to which a right of use and occupancy is retained under this section, shall provide that such property shall not be used for any purpose which is incompatible with purposes of this Act, or which impairs the usefulness and attractiveness of the lakeshore and if it should be so used, the Secretary shall have authority to terminate such right. In the event the Secretary exercises his power of termination under this subsection he shall pay to the owner of the right terminated an amount equal to the value of that portion of such right which remained unexpired on the date of such termination.

(c) Any land acquired by the Secretary under this Act on which there is situated a cottage or hunting lodge which, on December 31, 1964, was under lease to any lessee or lessees shall, if such lease is in effect on the date such land is so acquired, be acquired by the Secretary subject to such lease and the right of such lessee or lessees to continue using the property covered by such lease in accordance with the provisions thereof. Upon the expiration of such lease, the Secretary shall have the authority to enter into a lease with such lessee or lessees authorizing them to continue using such cottage or lodge (as the case may be) for a term of not to exceed twenty-five years, or for a term ending at the death of such lessee or lessees, subject to such conditions as may be prescribed by the Secretary.

Leasing author-  
ity.

SEC. 12. The Secretary shall, at the request of any township or county in or adjacent to the lakeshore affected by this Act, assist and consult with the appropriate officers and employees of such township or county in establishing zoning bylaws. Such assistance may include payments to the county or township for technical aid.

Zoning bylaws.

SEC. 13. The Secretary shall furnish to any interested person requesting the same a certificate indicating, with respect to any property which the Secretary has been prohibited from acquiring by condemnation in accordance with provisions of this Act, that such authority is prohibited and the reasons therefor.

SEC. 14. There are hereby authorized to be appropriated not more than \$6,873,000 for the acquisition of lands and interests in land in connection with, and not more than \$6,348,000 for development of, the Pictured Rocks National Lakeshore.

Appropriation.

Approved October 15, 1966.

**SEC. 202. PROVISION FOR ROADS IN PICTURED ROCKS NATIONAL LAKESHORE.**

Section 6 of the Act of October 15, 1966, entitled "An Act to establish in the State of Michigan the Pictured Rocks National Lakeshore, and for other purposes" (16 U.S.C. 460s-5), is amended as follows:

(1) In subsection (b)(1) by striking "including a scenic shoreline drive" and inserting "including appropriate improvements to Alger County Road H-58".

(2) By adding at the end the following new subsection:

"(c) **PROHIBITION OF CERTAIN CONSTRUCTION.**--A scenic shoreline drive may not be constructed in the Pictured Rocks National Lakeshore."

Approved November 12, 1998.

**PUBLIC LAW 107-295—NOV. 25, 2002      116 STAT. 2129-30****SEC. 437. PICTURED ROCKS NATIONAL LAKESHORE BOUNDARY REVISION.      16 USC 460s-15.**

(a) **TRANSFER.**—As soon as practicable after the date of enactment of this Act, the Administrator of General Services may transfer to the Secretary, without consideration, administrative jurisdiction over, and management of, the public land.

(b) **BOUNDARY REVISION.**—The boundary of the Lakeshore is revised to include the public land transferred under subsection (a).

(c) **AVAILABILITY OF MAP.**—The map shall be on file and available for public inspection in the appropriate offices of the National Park Service.

(d) **ADMINISTRATION.**—The Secretary may administer the public land transferred under section (a)—

(1) as part of the Lakeshore; and

(2) in accordance with applicable laws (including regulations).

(e) **ACCESS TO AIDS TO NAVIGATION.**—The Secretary of Transportation, in consultation with the Secretary, may access the front and rear range lights on the public land for the purposes of servicing, operating, maintaining, and repairing those lights.

(f) **DEFINITIONS.**—In this section:

(1) **LAKESHORE.**—The term "Lakeshore" means the Pictured Rocks National Lakeshore in the State of Michigan.

(2) **MAP.**—The term "map" means the map entitled "Proposed Addition to Pictured Rocks National Lakeshore", numbered 625/80048, and dated April 2002.

(3) **PUBLIC LAND.**—The term "public land" means the approximately .32 acres of United States Coast Guard land and improvements to the land, including the United States Coast Guard Auxiliary Operations Station and the front and rear range lights, as depicted on the map.

APPENDIXES

(4) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary \$225,000 to restore, preserve, and maintain the public land transferred under subsection (a).

## APPENDIX B: SERVICEWIDE MANDATES AND POLICIES

The alternatives considered in this document incorporate and comply with the provisions of the following mandates and policies as funding and staffing allow. Conditions prescribed by servicewide mandates and policies that are particularly important to this document are summarized below. These mandates and policies illustrate that a general management plan is not needed to decide, for instance, that it is appropriate to protect endangered species, control exotics species, protect archeological sites, provide for access for visitors with disabilities, and conserve artifacts. Those and other things are already laws, mandates, or policies.

### Relations with National Lakeshore Neighbors

Current policy requires the following:

Relations with National Lakeshore Neighbors and Other Agencies Desired Condition	Source
The national lakeshore is managed as part of a greater ecological, social, economic, and cultural system.	<i>NPS Management Policies</i>
<p>Because the national lakeshore is an integral part of larger regional environment, the National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts, protect national lakeshore resources, and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, Indian tribes, neighboring landowners, and all other concerned parties.</p>	

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to national lakeshore neighbors:

- Continue to establish and foster partnerships with public and private organizations to achieve the mission and purposes of the national lakeshore. Partnerships will be sought for resource protection, research, education, and visitor enjoyment.
- National lakeshore staff will keep landowners, land managers, local governments, and the general public informed about national lakeshore management activities. Periodic consultations will occur with landowners and communities affected by national lakeshore visitors and management actions. The National Park Service will work closely with local, state, and federal agencies and tribal governments whose programs affect or are affected by activities in the national lakeshore. National lakeshore staff will continue their regular consultations with such entities as: the Michigan State Historic Preservation Office, the Michigan Department of Natural Resources, American Indian tribes, Alger County and Burt Township planning commissions and zoning boards, the Central Upper Peninsula Regional Planning Commission, the U.S. Forest Service, the U.S. Fish and Wildlife Service, the city of Munising, the Burt and Munising Townships, the Alger County Sheriff's Department, the Michigan State Police, and the Department of Defense.
- Frequent consultations will continue to take place with ForestLand Group, Limited Liability Corporation, and other inland buffer zone property owners.

## Air Quality

The national lakeshore is a class II air quality area. Current laws and policies require that the following conditions be achieved in the national lakeshore.

Air Quality Desired Condition	Source
Air quality in the national lakeshore meets national ambient air quality standards for specified pollutants.	Clean Air Act NPS <i>Management Policies</i>
Activities in the national lakeshore do not contribute to deterioration in air quality.	Clean Air Act NPS <i>Management Policies</i>

The National Park Service has little control over air quality in the Upper Peninsula of Michigan. Therefore, the national lakeshore must cooperate with other government agencies and the Environmental Protection Agency to monitor and protect air quality. The National Park Service will take the following kinds of actions to meet the legal and policy requirements related to air quality in Pictured Rocks National Lakeshore.

- Conduct air quality monitoring in conjunction with other government agencies.
- Participate in regional air pollution control plans and regulations.
- Conduct national lakeshore operations in compliance with federal, state, and local air quality regulations.

## Water Resources

Current laws and policies require that the following conditions are achieved in the national lakeshore.

Water Resources Desired Condition	Source
Surface waters and groundwater are protected and water quality meets or exceeds all applicable water quality standards	Clean Water Act Executive Order 11514 NPS <i>Management Policies</i>
NPS programs and facilities are maintained and operated to avoid pollution of surface waters and groundwater.	Clean Water Act Executive Order 12088 NPS <i>Management Policies</i>
Natural floodplain values are preserved.	Clean Water Act Executive Order 11988 Rivers and Harbors Act NPS <i>Management Policies</i>
The natural and beneficial values of wetlands are preserved and enhanced.	Clean Water Act Executive Order 11990 Rivers and Harbors Act NPS <i>Management Policies</i> 2001

The national lakeshore lies within the Lake Superior watershed. The management of the watershed that is south of the national lakeshore can have a significant impact on the waters in and flowing through the national lakeshore boundary.

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As with air quality, the National Park Service must cooperate with other government agencies to protect water quality. The National Park Service will take the following kinds of actions to meet legal and policy requirements related to water resources.

- Apply best management practices to all pollution-generating activities and facilities in the national lakeshore, such as operating maintenance and storage facilities and parking areas.
- Minimize the use of pesticides and other chemicals and manage them in conformance with NPS policy and federal regulations.
- Promote greater public understanding of water resource issues at Pictured Rocks National Lakeshore and encourage public support for and participation in protecting the Lake Superior watershed.
- Continue NPS monitoring program and participation in watershed councils.
- Continue to work with Alger County on the maintenance and redesign of H-58 to reduce sedimentation. Continue to monitor the Miners Beach road and take appropriate mitigating actions to reduce sedimentation at the three road crossings that are identified as high risk for sedimentation downstream of road crossings (over rivers).

### Invasive Species

Current laws and policies require that the following conditions be achieved in the national lakeshore.

Invasive Species Desired Condition	Source
<p>All exotic plant and animal species that are not maintained to meet an identified national lakeshore purpose are managed— up to and including eradication— if (1) control is prudent and feasible, and (2) the exotic species:</p> <ul style="list-style-type: none"> <li>• Interferes with natural processes and the perpetuation of natural features, native species or natural habitats; or</li> <li>• Disrupts the genetic integrity of native species; or</li> <li>• Disrupts the accurate presentation of a cultural landscape; or</li> <li>• Damages cultural resources; or</li> <li>• Significantly hampers the management of national lakeshore or adjacent lands; or</li> <li>• Poses a public health hazard as advised by the U. S. Public Health Service (which includes the Centers for Disease Control and the NPS Public Health Program); or</li> </ul> <p>Creates a hazard to public safety.</p>	<p>NPS <i>Management Policies 2001</i></p>

Invasive Species Desired Condition (cont.)	Source (cont.)
<p>High priority is given to managing exotic species that have, or potentially could have, a substantial impact on national lakeshore resources, and that can reasonably be expected to be successfully controllable. Lower priority is given to exotic species that have almost no impact on national lakeshore resources or that probably cannot be successfully controlled.</p> <p>The decision to initiate management should be based on a determination that the species is exotic. For species determined to be exotic and where management appears to be feasible and effective, superintendents should</p> <p>(1) evaluate the species' current or potential impact on national lakeshore resources; (2) develop and implement exotic species management plans according to established planning procedures; (3) consult, as appropriate, with federal and state agencies; and (4) invite public review and comment, where appropriate. Programs to manage exotic species are designed to avoid causing significant damage to native species, natural ecological communities, natural ecological processes, cultural resources, and human health and safety.</p> <p>The national lakeshore prevents the introduction of invasive species and provides for their control and to minimize the economic, ecological, and human health impacts that invasive species cause</p> <p>Each federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law,</p> <ol style="list-style-type: none"> <li>1. identify such actions;</li> <li>2. subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: <ol style="list-style-type: none"> <li>(i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and</li> </ol> </li> <li>3. not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.</li> </ol> <p>Federal agencies shall pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the "Invasive Species Management Plan" and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.</p>	<p>Executive Order 13112 (which addresses portions of the following laws: National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C. 4701 et seq.), Lacey Act, as amended (18 U.S.C. 42), Federal Plant Pest Act (7 U.S.C. 150aa et seq.), Federal Noxious Weed Act of 1974, as amended (7 U.S.C. 2801 et seq.), Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.),</p>

## Managing Biological Resources

Current laws/policies require that the following condition be achieved in the national lakeshore.

Managing Biological Resources	Source
<p>The National Park Service maintains all native plants and animals as parts of the national lakeshore’s natural ecosystems. The term “plants and animals” refers to all five of the commonly recognized kingdoms of living things(including such groups as flowering plants, ferns, mosses, lichens, algae, fungi, bacteria, mammals, birds, reptiles, amphibians, fishes, insects, worms, crustaceans, and microscopic plants or animals). The Service will achieve this maintenance by:</p> <ul style="list-style-type: none"> <li>Preserving and restoring the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur;</li> <li>Restoring native plant and animal populations in the national lakeshore when they have been extirpated by past human- caused actions; and</li> <li>Minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them.</li> </ul> <p>The individual plants and animals found within the national lakeshore are genetically parts of species populations that may extend across both national lakeshore and non- national-lakeshore lands. As local populations within a group of populations naturally fluctuate in size, they become vulnerable to natural or human-caused extirpation during periods when their numbers are low. The periodic disappearance of local populations is common in some species, and the regional persistence of these species depends upon the natural recolonization of suitable habitat by individuals from the remaining local populations. Thus, providing for the persistence of a species in the national lakeshore may require maintaining a number of local populations, often both within and outside the national lakeshore.</p> <p>In addition, some populations of vertebrate and invertebrate animals, such as bats, warblers, frogs, salmon, deer, and butterflies, migrate at regular intervals into and out of the national lakeshore. For these migratory populations, the national lakeshore provides only one of the several major habitats they need, and survival of the species in the lakeshore also depends on the existence and quality of habitats outside the lakeshore. The Park Service will adopt lakeshore resource preservation, development, and use management strategies that are intended to maintain the natural population fluctuations and processes that influence the dynamics of individual plant and animal populations, groups of plant and animal populations, and migratory animal populations in the national lakeshore.</p> <p>In addition to maintaining all native plant and animal species and their habitats inside the lakeshore, the Park Service will work with other land managers to encourage the conservation of the populations and habitats of these species outside lakeshore whenever possible. To meet its commitments for maintaining native species in the lakeshore, the Park Service will cooperate with states, tribal governments, the U. S. Fish and Wildlife Service, and the U.S. Forest Service, as appropriate, to:</p> <ul style="list-style-type: none"> <li>Participate in local and regional scientific and planning efforts, identify ranges of populations of native plants and animals, and develop cooperative strategies for maintaining or restoring these populations in the national lakeshore;</li> <li>Suggest mutually beneficial harvest regulations for lands and waters outside the national lakeshore for populations that extend across lakeshore boundaries, such as resident deer or fishes; for short-distance seasonal migrant populations, such as moose or fishes; or for long-distance migrant populations, such as salmon;</li> <li>Develop data, through monitoring, for use in plant and animal management programs (such as local land management decision- making for assessing resident plant and animal population trends.</li> <li>Present information about species life cycles, ranges, and population dynamics in national lakeshore interpretive programs for use in increasing public awareness of management needs for all species, both resident and migrant, that occur in the lakeshore.</li> </ul>	<p>NPS <i>Management Policies, 2001</i></p>

## Geologic Resources

Current laws and policies require that the following condition be achieved in the national lakeshore.

Geologic Resources Desired Condition	Source
Natural soil resources and processes function in as natural a condition as possible, except where special considerations are allowable under policy.	NPS <i>Management Policies 2001</i>

Soil resources in some portions of the national lakeshore are adversely affected by accelerated erosion, compaction, and deposition caused by human activities. The National Park Service will take the following kinds of actions to comply with the legal and policy requirements related to geologic resources.

- Survey areas of the national lakeshore with soil resource problems and take actions appropriate to the management prescription to prevent further artificial erosion, compactions, or deposition.
- Apply effective best management practices to problem soil erosion and compaction areas in a manner that stops or minimizes erosion, restores soil productivity, and re-establish or sustain a self-perpetuating vegetative cover.

## Species of Special Concern

Current laws and policies require that the following conditions be achieved in the national lakeshore.

Species of Special Concern Desired Condition	Source
Federal and state-listed threatened and endangered species and their habitats are protected and sustained.	Endangered Species Act and equivalent state protective legislation, NPS <i>Management Policies</i>
Populations of native plant and animal species function in as natural condition as possible except where special considerations are warranted.	NPS <i>Management Policies 2001</i>
Native species populations that have been severely reduced in or extirpated from the national lakeshore are restored where feasible and sustainable.	NPS <i>Management Policies 2001</i>
The management of populations of exotic plant and animal species, up to and including eradication, will be undertaken wherever such species threaten national lakeshore resources or public health and when control is prudent and feasible.	NPS <i>Management Policies 2001</i>

Development and activities in the national lakeshore affect native species habitat. For instance, structures, roads, and trails needed for visitor use and national lakeshore maintenance influence both native and exotic species distribution. Roads also dissect the natural areas of the national lakeshore and may create barriers or hazards for some animals such as invertebrates, snakes, and small mammals.

In the case of species that are rare and subject to collection for American Indian cultural reasons, surveys and monitoring programs will be undertaken to ensure that stable populations of these species are maintained.

The National Park Service will take the following kinds of actions to comply with legal and policy requirements related to native species.

- Inventory the plants and animals in the national lakeshore. Use the inventory as a baseline against which to regularly monitor the distribution and condition of selected species, including indicators of ecosystem condition and diversity, rare or protected species, and invasive exotics. Modify management plans to be more effective, based on the results of monitoring.
- Support research that contributes to management knowledge of native species.
- Review national lakeshore fishing regulations and revise them as appropriate to support native fish populations.
- Manage exclusively for native plant species in pristine and primitive management prescriptions. In other management prescriptions, limit planting of nonnative species to noninvasive plants that are justified by the historic scene or operational needs.
- Control or eliminate exotic plants and animals, exotic diseases, and pest species where there is a reasonable expectation of success and sustainability. Base control efforts on:
  - the potential threat to legally protected or uncommon native species and habitats
  - the potential threat to visitor health or safety
  - the potential threat to scenic and aesthetic quality
  - the potential threat to common native species and habitat
- Manage exotic diseases and pest species based on similar priorities.
- Provide interpretive and educational programs on the preservation of native species for visitors and for residents neighboring the national lakeshore boundary.

### Fire Management

Current laws and policies require that the following condition be achieved in the national lakeshore.

Fire Management Desired Condition	Source
All wildfires are suppressed or controlled as soon as possible.	NPS <i>Management Policies 2001</i>

The national lakeshore averages less than one wildfire per year. Those wildfires are usually less than 1 acre in size. Past fire causes have been lightning (natural) and unattended campfires (man). There is the possibility of applying prescribed fire in the future to achieve specific resource management goals, but there is no plan to use prescribed fire in the next five to seven years.

Large wildfires in the national lakeshore, if they were to occur, could pose a threat to residences and commercial development adjoining the national lakeshore. To prevent these types of fires, the National Park Service will take the following kinds of actions to comply with fire management legal and policy requirements.

- Suppress all wildfires as quickly as possible.
- Maintain a cooperative agreement for wildfire suppression in the national lakeshore with Hiawatha National Forest, the Michigan Department of Natural Resources, and Seney National Wildlife Refuge.

### Night Sky

Views of the national lakeshore’s night skies are features that contribute to the visitor experience.

Night Sky Desired Condition	Source
The National Park Service cooperates with national lakeshore neighbors and local government agencies to help minimize the intrusion of artificial light into the night sky in the national lakeshore. In natural areas, artificial outdoor lighting is limited to basic safety requirements and is shielded when possible.	<i>NPS Management Policies 2001</i>

The National Park Service will take the following kinds of actions to comply with this policy:

- National lakeshore staff will work with local communities and other agencies to encourage protection of the views of the night sky.
- National lakeshore staff will evaluate impacts on the night sky caused by facilities in the national lakeshore. If light sources in the national lakeshore are determined to be affecting views of the night skies, national lakeshore staff will study alternatives such as shielding lights, changing lamp types, or eliminating unnecessary sources.

### Natural Soundscapes

An important part of the NPS mission is to preserve or restore the natural soundscapes associated with national park system units. The sounds of nature are among the intrinsic elements that form the environment of our national park system units. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. Natural sounds are slowly and inexorably disappearing from most national park system units.

Natural Soundscapes Desired Condition	Source
The National Park Service preserves the natural ambient soundscapes, restores degraded soundscapes to the natural ambient condition wherever possible, and protects natural soundscapes from degradation due to human-caused noise. The National Park Service manages disruptions from recreational uses to provide a high-quality visitor experience, striving to preserve or restore the natural quiet and natural sounds.	<i>NPS Management Policies 2001</i>

The National Park Service will take the following kinds of actions to comply with this policy:

- Activities causing excessive or unnecessary unnatural sounds in and adjacent to the national lakeshore, including low-elevation aircraft overflights, will be monitored, and action will be taken to prevent or minimize unnatural sounds that adversely affect national lakeshore resources or values or visitors' enjoyment of them.
- Noise generated by NPS management activities will be minimized by strictly regulating administrative functions such as motorized equipment. Noise will be a consideration in the procurement and use of equipment by the national lakeshore staff.
- National lakeshore managers will work with tour operators and all other interested parties to develop an air tour management plan. The National Park Service will continue to work with the Federal Aviation Administration, tour operators, commercial businesses, and general aviation interests to encourage aircraft to fly around the national lakeshore, especially for those flights where the presence of the national lakeshore is incidental to the purpose of the flight (i.e., transit between two points.)

### Archeological Resources

Current laws and policies require that the following conditions be achieved in the national lakeshore.

Archeological Resources Desired Condition	Source
Archeological sites are identified and inventoried, and their significance is determined and documented.	National Historic Preservation Act, Executive Order 11593
Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable.	Archeological and Historic Preservation Act, Archeological Resources Protection Act, <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> (1992),
In those cases where disturbance or deterioration is unavoidable, the site is professionally documented and salvaged.	Programmatic Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and National Council of State Historic Preservation Officers (1995), <i>NPS Management Policies 2001</i>

The archeological sites in the national lakeshore have not been systematically surveyed or inventoried. Precise information about the location, characteristics, significance, and condition of most archeological resources in the national lakeshore is lacking, and impacts are difficult to measure. The National Park Service will take the following kinds of actions to meet legal and policy requirements related to archeological sites.

- Survey and inventory archeological resources and document their significance.

- Treat all archeological resources as eligible for listing on the National Register of Historic Places pending the opinion of the Michigan state historic preservation officer (SHPO) and a formal determination by the Keeper of the national register as to their significance.
- Protect all archeological resources determined eligible for listing or listed on the national register. If disturbance to such resources is unavoidable, conduct formal consultation with the Advisory Council on Historic Preservation (ACHP) and the state historic preservation officer in accordance with the National Historic Preservation Act.

### Historic Properties

Current laws/policies require that the following conditions be achieved in the national lakeshore for historic properties, such as buildings, structures, roads, trails, and cultural landscapes:

Historic Properties Desired Condition	Source
Historic properties are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria.	National Historic Preservation Act, Executive Order 11593 Archeological and Historic Preservation Act, <i>Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</i> (1992),
The qualities of historic properties that contribute to their actual listing or their eligibility for listing on the National Register of Historic Places are protected in accordance with the <i>Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</i> unless it is determined through a formal process that disturbance or natural deterioration is unavoidable.	Programmatic Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and National Council of State Historic Preservation Officers (1995), <i>NPS Management Policies</i>

The national lakeshore includes two listed National Register of Historic Places sites and several others that are considered eligible for listing. All of these cultural resources are considered to be in good condition with a number having undergone historic restoration. The survey, inventory, and evaluation of cultural resources have begun.

The National Park Service will take the following kinds of action to meet legal and policy requirements related to historic properties.

- Complete a survey, inventory, and evaluation of historic properties under national register criteria.
- Complete a survey, inventory, and evaluation of cultural landscapes.
- Submit the inventory and evaluation results to the state historic preservation officer and the Keeper of the national register with recommendations for eligibility to the national register.
- Determine the appropriate level of preservation for each historic property formally determine to be eligible for listing or actually listed on the national register, subject to the *Secretary of the Interior’s Standards*.
- Implement and maintain the appropriate level of preservation for such properties.
- Identify, inventory, and conserve collections.

## Ethnographic Resources

Certain contemporary American Indian and other communities are permitted by law, regulation, or policy to pursue customary religious, subsistence, and other cultural uses of national lakeshore resources with which they are traditionally associated. Recognizing that its resource protection mandate affects this human use and cultural context of national lakeshore resources, the National Park Service plans and executes programs in ways that safeguard cultural and natural resources while reflecting informed concern for the contemporary peoples and cultures traditionally associated with them.

Ethnographic Resource Desired Condition	Source
Appropriate cultural anthropological research is conducted in cooperation with national lakeshore-associated groups.	<i>NPS Management Policies</i>
The National Park Service accommodates access to and ceremonial use of American Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites.	Executive Order 13007 on American Indian Sacred Sites
NPS general regulations on access to and use of natural and cultural resources in the national lakeshore are applied in an informed and balanced manner that is consistent with national lakeshore purposes and does not unreasonably interfere with American Indian use of traditional areas or sacred resources and does not result in the degradation of national lakeshore resources.	<i>NPS Management Policies</i> , E.O. 13007 on American Indian Sacred Sites
Other federal agencies, state and local governments, potentially affected American Indian and other communities, interest groups, the state historic preservation officer, the tribal historic preservation officer, and the Advisory Council on Historic Preservation are given opportunities to become informed about and comment on anticipated NPS actions at the earliest practicable time.	National Historic Preservation Act, Programmatic Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995), Executive Order 11593, American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007 on American Indian Sacred Sites, Presidential Memorandum of April 29, 1994 on Government-to-Government Relations with Tribal Governments, <i>NPS Management Policies 2001</i>

Ethnographic Resource Desired Condition (cont.)	Source (cont.)
The National Park Service consults with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals. National lakeshore staff regularly consult with traditionally associated American Indians regarding planning, management, and operational decisions that affect subsistence activities, sacred materials or places, or other ethnographic resources with which they are historically associated.	American Indian Religious Freedom Act, Presidential Memorandum of April 29, 1994 on Government-to-Government Relations with Tribal Governments, NPS <i>Management Policies</i>
The identities of community consultants and information about sacred and other culturally sensitive places and practices are kept confidential.	<i>NPS Management Policies</i>
American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains are consulted when remains may be disturbed or are encountered on national lakeshore lands.	<i>NPS Management Policies</i> , Native American Grave Protection and Repatriation Act

To accomplish these goals, the National Park Service will do the following:

- Survey and inventory ethnographic resources and document their significance.
- Treat all ethnographic resources as eligible for listing on the National Register of Historic Places pending a formal determination by NPS and Michigan state historic preservation officer as to their significance.
- Protect all ethnographic resources determined eligible for listing or listed on the national register; if disturbance to such resources is unavoidable, conduct formal consultation with Advisory Council on Historic Preservation and the state historic preservation officer in accordance with the National Historic Preservation Act.
- Conduct regular consultations with affiliated tribes to continue to improve communications and resolve any problems or misunderstandings that occur.
- Provide for access to and use of natural and cultural resources in the national lakeshore and collections by American Indians that are consistent with national lakeshore purposes, do not unreasonably interfere with American Indian use of traditional areas or sacred resources, and do not degrade national lakeshore resources.

In addition, consultation with affiliated Indian tribes was conducted throughout the course of the planning process for this document. Resources important to Indian tribes were identified during the scoping process by the tribes. That information was carefully incorporated into the design of the alternatives so that these resources are protected under any alternative considered.

## Collections

Current laws and policies require that the following condition be achieved in Pictured Rocks National Lakeshore.

Collections Desired Condition	Source
All museum objects and manuscripts are identified and inventoried, and their significance is determined and documented. Collections are protected in accordance with established standards.	National Historic Preservation Act, American Indian Religious Freedom Act, Archeological and Historic Preservation Act, Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act, <i>NPS Management Policies 2001</i>

The Pictured Rocks National Lakeshore museum collections are at risk. Improper storage and lack of adequate security and fire protection at facilities where the collections are housed threaten their safety and integrity. Significant portions of the archeological and historical collections are not cataloged. They are stored in two locations: the Grand Marais Maritime Museum storage and Midwest Archeological Center in Lincoln, NE. The National Park Service will take the following kinds of actions to meet legal and policy requirements related to collections.

- Inventory and catalogue all of the national lakeshore’s museum collection in accordance with standards outlined in the *NPS Museum Handbook* (NPS1976).
- Develop and implement a collection management program according to NPS standards to guide protection, conservation, and use of museum objects.

## Visitor Experience and Use Requirements

Current laws and policies require that the following conditions be achieved in Pictured Rocks National Lakeshore.

Visitor Experience and Use Desired Condition	Source
Visitor and employee safety and health are protected.	<i>NPS Management Policies 2001</i> , General Authorities Act
Visitors understand and appreciate national lakeshore values and resources and have the information necessary to adapt to the national lakeshore environments. Visitors have opportunities to enjoy the national lakeshore in ways that leave national lakeshore resources unimpaired for future generations.	NPS Organic Act, Pictured Rocks National Lakeshore enabling legislation, <i>NPS Management Policies 2001</i>
Recreational uses in the national lakeshore are promoted and regulated. Basic visitor needs are met in keeping with the national lakeshore purposes.	NPS Organic Act, Pictured Rocks National Lakeshore enabling legislation, Title 36 of the Code of Federal Regulations, <i>NPS Management Policies 2001</i>

Visitor Experience and Use Desired Condition (cont.)	Source (cont.)
To the extent feasible, facilities, programs, and services in the national lakeshore are accessible to and usable by all people, including those with disabilities.	The Architectural Barriers Act of 1968; the Americans with Disabilities Act of 1990 and 28 CFR Part 36 (most current) on Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities (ADAAG – ADA) Accessibility Guidelines for Buildings and Facilities); <i>NPS Management Policies 2001</i> ; the Uniform Federal Accessibility Standards of 1984 (UFAS); the US Access Board Draft Accessibility Guidelines for Outdoor Developed Areas of 1999; the Rehabilitation Act of 1973; Secretary of the Interior’s regulation 43 CFR 17 – Enforcement on the Basis of Disability in the Interior Programs

Regulations governing visitor use and behavior in units of the national park system are contained in Title 36 of the U.S. *Code of Federal Regulations* (36 CFR). These regulations have force of law and include a variety of use limitations, such as limits on commercial activities. The following regulations are especially pertinent to planning for Pictured Rocks National Lakeshore because of issues raised by the public during scoping.

- Pets must be crated, caged, restrained on a leash (6 feet long or less), or otherwise physically confined at all times (36 CFR 2.15).
- Bicycles are prohibited except on roads, parking areas, and designated routes (36 CFR 4.30).
- Snowmobiles are prohibited except on designated routes (36 CFR 2.18 and 7.32).
- Personal watercraft would be allowed to launch from a designated launch site (currently Sand Point) and operate on Lake Superior within the national lakeshore boundary from the western boundary up to the east end of Miners Beach. Personal watercraft users would be allowed to beach their craft on Miners Beach. Personal watercraft would not be allowed to launch or operate elsewhere within the national lakeshore.
- Commercial recreational activities are managed under provisions of incidental business permits.

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to visitor experience and use at the national lakeshore:

- Provide opportunities for visitors to understand, appreciate, and enjoy the national lakeshore.
- Ensure that all national lakeshore programs and facilities are accessible to the extent feasible.
- Continue to enforce the regulations in 36 CFR.

These laws, regulations, and policies leave room for judgment regarding the best mix of types and levels of visitor use activities, programs, and facilities. The alternatives presented and evaluated in this general management plan represent different approaches to visitor experience and national lakeshore use.

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to accessibility.

- **Architectural and Site Access.** The National Park Service will develop strategies to ensure that all new and renovated buildings and facilities, including those provided by concessioners are designed and constructed in conformance with applicable rules, regulations, and standards. Existing buildings and facilities will be evaluated to determine the degree to which they are currently accessible to and usable by people with disabilities, and to identify barriers that limit access. Each national park system unit will develop action plans identifying how those barriers will be removed. Action plan elements and funding strategies should be included within annual and strategic (five-year) plans.
- **Programmatic Access.** The National Park Service will develop strategies to ensure that all services and programs, including those offered by concessioners and interpreters, are designed and implemented in conformance with applicable rules, regulations, and standards. Existing programs, activities, and services (including interpretation, communication, media, and Web pages) will be evaluated to determine the degree to which they are currently accessible to and usable by people with disabilities, and to identify barriers that limit access. Each national park system unit will develop action plans to identify how those barriers will be removed. Action plan elements and funding strategies should be included in annual and strategic plans.
- **National-lakeshore-specific discussion** should include: the types of national lakeshore experiences offered and how a representative range of experiences are offered to those with disabilities; any factors likely to limit access solutions or require alternative forms of access (steep grades, historic structures, special circumstances, and restrictions on service animals. Every attempt should be made to provide access to essential national lakeshore experiences.

### Sustainable Design/Development

Sustainability can be described as the result achieved by doing things in ways that do not compromise the environment or its capacity to provide for current and future generations. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically responsible materials and techniques.

Sustainable Design/Development Desired Condition	Source
NPS visitor and management facilities are harmonious with national lakeshore resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy efficient, and cost-effective.	<i>NPS Management Policies</i>

The NPS *Guiding Principles of Sustainable Design* (1993) directs NPS management philosophy. It provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of tourist facilities that emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. Sustainability principles have been developed and are followed for interpretation, natural resources, cultural resources,

site design, building design, energy management, water supply, waste prevention, and facility maintenance and operations. The National Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems emphasizing the use of renewable energy sources.

In addition to following these principles, the following will also be accomplished:

- National lakeshore staff will work with appropriate experts to make the national lakeshore's facilities and programs sustainable. Value analysis and value engineering, including life-cycle cost analysis, will be performed to examine the energy, environmental, and economic implications of proposed national lakeshore developments.
- National lakeshore staff will support and encourage suppliers, permittees, and contractors to follow sustainable practices.
- National lakeshore interpretive programs will address sustainable national lakeshore and non-national lakeshore practices.

## APPENDIX C: LAWS AND EXECUTIVE ORDERS

### LEGAL CITATIONS

#### NATIONAL PARK SERVICE ENABLING LEGISLATION

- Act of June 30, 1864, 13 Stat. 325, 16 U.S.C. §48
- Act of March 1, 1872, 17 Stat. 32, 16 U.S.C. §21 *et seq.*
- Lacey Act of 1900, as amended by P.L. 97-79, 18 U.S.C. §§42-44, Title 50 CFR
- Act of August 25, 1916 (National Park Service Organic Act), P.L. 64-235, 16 U.S.C. §1 *et seq.* as amended
- Act of June 5, 1920, 41 Stat. 917, 16 U.S.C. §6
- Act of February 21, 1925, 43 Stat. 958, (temporary act, not classified)
- Act of May 26, 1930, 16 U.S.C. §17-17j
- Act of March 3, 1933, 47 Stat. 1517
- Parks, Parkways, and Recreational Programs Act, June 23, 1936, 49 Stat. 1894, 16 U.S.C. §§17k-n
- Act of August 8, 1953, 16 U.S.C. §1b-1c
- Act to Improve the Administration of the National Park System, August 18, 1970; P.L. 91-383, 84 Stat. 825, as amended by P.L. 94-458, P.L. 95-250, and P.L. 95-625; 16 U.S.C. § 1a1 *et seq.*
- General Authorities Act, October 7, 1976, P.L. 94-458, 90 Stat. 1939, 16 U.S.C. §1a-1 *et seq.*
- Act amending the Act of October 2, 1968 (commonly called Redwoods Act), March 27, 1978, P.L. 95-250, 92 Stat. 163, 16 U.S.C. §§1a-1, 79a-q
- National Parks and Recreation Act, November 10, 1978, P.L. 95-625, 92 Stat. 3467; 16 U.S.C. §1 *et seq.*
- Alaska National Interest Lands Conservation Act of 1980, P.L. 96-487, 94 Stat. 2371, 16 U.S.C. §3161 *et seq.*
- NPS resources, improve ability to manage, P.L. 101-337, 16 U.S.C. §19jj
- National Parks Omnibus Management Act of 1998, P.L. 105-391, Title IV, National Park Service Concessions Management Improvement Act of 1998

#### OTHER LAWS AFFECTING THE NATIONAL PARK SERVICE

##### Accessibility

- Americans with Disabilities Act, P.L. 101-336, 104 Stat. 327, 42 U.S.C. §12101
- Architectural Barriers Act of 1968, P.L. 90-480, 82 Stat. 718, 42 U.S.C. §4151 *et seq.*
- Rehabilitation Act of 1973, P.L. 93-112, 87 Stat. 357, 29 U.S.C. §701 *et seq.* as amended by the Rehabilitation Act Amendments of 1974, 88 Stat. 1617

##### Cultural Resources

- Abandoned Shipwreck Act of 1987, P.L. 100-298, 102 Stat. 432, 42 U.S.C. §2101-6
- American Folklife Preservation Act of 1976, P.L. 94-201, 89 Stat. 1130, 20 U.S.C. §§2101-2107
- American Indian Religious Freedom Act, P.L. 95-341, 92 Stat. 469, 42 U.S.C. §1996
- Antiquities Act of 1906, P.L. 59-209, 34 Stat. 225, 16 U.S.C. §432 and 43 CFR 3
- Archaeological and Historic Preservation Act of 1974, P.L. 93-291, 88 Stat. 174, 16 U.S.C. §469
- Archaeological Resources Protection Act of 1979, P.L. 96-95, 93 Stat. 712, 16 U.S.C. §470aa *et seq.* and 43 CFR 7, subparts A and B, 36 CFR 79
- Executive Order 11593: Protection and Enhancement of the Cultural Environment, 3 CFR 1971.
- Executive Order 13007: Indian Sacred Sites, May 24, 1996

- Historic Sites Act, P.L. 74-292, 49 Stat. 666, 16 U.S.C. §§ 461-467 and 36 CFR 65
- Historic Preservation Certifications Pursuant to the Tax Reform Act of 1976, the Revenue act of 1978, the Tax Treatment Extension Act of 1980, and the Economic Recovery Tax Act of 1981, 36 CFR 67
- Management of Museum Properties Act of 1955, P.L. 84-127, 69 Stat. 242, 16 U.S.C. §18f
- National Historic Preservation Act as amended, P.L. 89-665, 80 Stat. 915, 16 U.S.C. §470 *et seq* and 36 CFR 18, 60, 61, 63, 68, 79, 800
- National Trust Act of 1949, P.L. 81-408, 63 Stat. 927, 16 U.S.C. §§468c-e
- Native American Grave Protection and Repatriation Act, P.L. 101-601, 104 Stat. 3049, 25 U.S.C. §§3001-3013
- Presidential Memorandum of April 29, 1994 “Government-to-Government Relations with Native American Tribal Governments,” 59 FR 85
- Protection of Historic and Cultural Properties, E.O. 11593; 36 CFR 60, 61, 63, 800; 44 FR 6068
- Public Buildings Cooperative Use Act of 1976, P.L. 94-541, 90 Stat. 2505, 42 U.S.C. §4151-4156
- Reservoir Salvage Act of 1960, P.L. 86-523, 70 Stat. 220, 16 U.S.C. §§469-469c
- Tax Reform Act of 1976, P.L. 94-455, 90 Stat. 1916,
- World Heritage Convention, 1980, P.L. 96-515, 94 Stat. 3000

### Natural Resources

- Acid Precipitation Act of 1980, P.L. 96-294, 94 Stat. 770, 42 U.S.C. §8901 *et seq*
- Bald and Golden Eagles Protection Act as amended, P.L. Chapter 28, 54 Stat 250, 16 U.S.C. §§668-668d
- Clean Air Act as amended, P.L. Chapter 360, 69 Stat. 322, 42 U.S.C. §7401 *et seq*.
- Coastal Barrier Resources Act of 1982, P.L. 97-348, 96 Stat. 1653, 16 U.S.C. §3501 *et seq*
- Coastal Zone Management Act of 1972 as amended, P.L. 92-583, 86 Stat. 1280, 16 U.S.C. §1451 *et seq*.
- Comprehensive Environmental Response Compensation and Liability Act (commonly referred to as CERCLA or Superfund), P.L. 96-510, 94 Stat.2767, 42 U.S.C. §9601 *et seq*
- Emergency Planning and Community Right-to-Know Act, P.L. 99-499, 100 Stat. 1725, 42 U.S.C. §1101
- Endangered Species Act of 1973, as amended, P.L. 93-205, 87 Stat. 884, 16 U.S.C. §1531 *et seq*.
- Endangered Species Conservation Act of 1969,
- Estuary Protection Act, P.L. 90-454, 82 Stat. 625, 16 U.S.C. §1221
- Executive Order 11988: Floodplain Management, 42 FR 26951, 3 C.F.R. 121 (Supp 177)
- Executive Order 11990: Protection of Wetlands, 42 FR 26961, 3 C.F.R. 121 (Supp 177)
- Executive Order 11991: Protection and Enhancement of Environmental Quality
- Farmland Protection Policy Act of 1982, P.L. 97-98
- Federal Cave Resources Protection Act of 1988, P.L. 94-377, 102 Stat. 4546, 16 U.S.C. §4301
- Federal Advisory Committee Act of 1972, P.L. 92-463, 86 Stat.770
- Federal Insecticide, Fungicide, and Rodenticide Act, P.L. 92-516, 86 Stat. 973, 7 U.S.C. §136 *et seq*
- Federal Water Pollution Control Act (commonly referred to as Clean Water Act), P.L. 92-500, 33 U.S.C. §1251 *et seq*. as amended by the Clean Water Act, P.L. 95-217
- Fish and Wildlife Coordination Act of 1958 as amended, P.L. 85-624, 72 Stat. 563, 16 U.S.C. §661 *et seq*.
- Flood Disaster Protection Act of 1973, P.L. 93-234, 87 Stat. 975, 12 U.S.C. §24, §1709-1
- Geothermal Steam Act of 1970, as amended, 84 Stat. 1566, 30 U.S.C. §§1001-1027
- Geothermal Steam Act Amendments, P.L. 100-443, 30 U.S.C. §§1001, 1105, 1026, 1027
- Manguson Fishery Conservation and Management Act of 1976, P.L. 94-625, 90 Stat. 331m 16 U.S.C. §1801 *et seq*
- Marine Mammal Protection Act, P.L. 92-552, 86 Stat. 1027, 16 U.S.C. §1361 *et seq*.

- Marine Protection, Research, and Sanctuaries Act of 1972 (commonly known as Ocean Dumping Act), P.L. 92-532, 86 Stat. 1052, 16 U.S.C. §1361 *et seq.*
- Migratory Bird Conservation Act, P.L. Chapter 257, 45 Stat. 1222, 16 U.S.C. §715 *et seq.*
- Migratory Bird Treaty Act of 1918, P.L. 186, 40 Stat. 755
- National Environmental Policy Act of 1969, P.L. 91-190, 83 Stat. 852, 42 U.S.C. §4321 *et seq.*
- National Flood Insurance Act of 1968, P.L. 90-448, 82 Stat. 572, 42 U.S.C. §4001 *et seq.*, as amended
- National Park System Final Procedures for Implementing E.O. 11988 and 11990 (45 FR 35916 as revised by 47 FR 36718)
- Protection and Enhancement of Environmental Quality, E.O. 11514 as amended, 1970, E.O. 11991, 35 *Federal Register* 4247; 1977, 42 *Federal Register* 26967)
- Resource Conservation and Recovery Act, P.L. 94-580, 30 Stat. 1148, 42 U.S.C. §6901 *et seq.*
- Rivers and Harbors Act of 1899, 33 U.S.C. Chapter 425, as amended by P.L. 97-332, October 15, 1982 and P.L. 97-449, 33 U.S.C. §§401-403
- Safe Drinking Water Act, P.L. 93-523, 88 Stat. 1660, 42 U.S.C. §300f *et seq.*, 42 U.S.C. §201 and 21 U.S.C. §349
- Soil and Water Resources Conservation Act of 1977
- Water Resources Planning Act of 1965 (P.L. 89-80, 42 U.S.C. § 1962 *et seq.*) and Water Resource Council's Principles and Standards, 44 FR 723977
- Watershed Protection and Flood Prevention Act, P.L. 92-419, 68 Stat. 666, 16 U.S.C. §100186

#### Other

- Administrative Procedures Act, 5 U.S.C. § 551-559, §§701-706
- Aircraft Overflights Study Act of 1987, P.L. 101-91, 101 Stat. 674
- Airport and Airway Development Act of 1970, P.L. 91-258, 84 Stat. 226, 49 U.S.C. § 2208
- Airports In or Near National Parks Act, 64 Stat. 27, 16 U.S.C. §§ 7a-e
- Arizona Desert Wilderness Act (contains NPS boundary study provisions), P.L. 101-628, 16 U.S.C. §§1a-5, 460ddd, 460fff, and many more
- Concessions Policy Act of 1965, P.L. 89-249, 79 Stat. 969, 16 U.S.C. § 20 *et seq.*
- Department of Transportation Act of 1966, P.L. 89-670, 80 Stat. 931, 49 U.S.C. § 303
- Disposal of Materials on Public Lands (Material Act of 1947), 30 U.S.C. §§601-604
- Energy Supply and Environmental Coordination Act of 1974
- Executive Order 11987: Exotic Organisms, 42 FR 26407
- Executive Order 11989 (42 FR 26959) and 11644: Offroad Vehicles on Public Lands
- Executive Order 12003: Energy Policy and Conservation, 3 C.F.R. 134 (Supp. 1977), 42 U.S.C. § 2601
- Executive Order 12008: Federal Compliance with Pollution Control Standards
- Executive Order 12372: Intergovernmental Review of Federal Programs, 47 FR 30959
- Federal Coal Leasing Amendments Act of 1976, P.L. 94-377, 90 Stat. 1083, 30 U.S.C. §201
- Federal Land Policy and Management Act, P.L. 94-579, 90 Stat. 199, 43 U.S.C. §1714 *et seq.*
- Federal Power Act of 1920, P.L. Chapter 285, 41 Stat. 106, 16 U.S.C. §791a *et seq.*
- Federal Water Power Act, P.L. Chapter 285, 41 D 1063, 16 U.S.C. §823a, as amended 16 U.S.C. §797
- Federal Water Project Recreation Act, 79 Stat. 213, P.L. 89-72, 16 U.S.C. §§ 460l-12 to 460l-21
- Forest and Rangeland Renewable Resources Planning Act, P.L. 95-307, 92 Stat. 353, 16 U.S.C. §1600 *et seq.*
- Freedom of Information Act, P.L. 93-502, 5 U.S.C. §552 *et seq.*
- Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory, 45 FR 59189, 08/15/80, ES 80-2
- Intergovernmental Cooperation Act of 1968, P.L. 90-577, 40 U.S.C. §§ 531-535 and 31 U.S.C. §§6501-6508
- Intergovernmental Coordination Act of 1969, 42 U.S.C. §§4101, 4231, 4233

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- Land and Water Conservation Fund Act of 1965 as amended, P.L. 88-578, 78 Stat. 897, 16 U.S.C. §§460l-4 to 460l-11
- Mineral Leasing Act for Acquired Lands of 1947, P.L. Chapter 681, 61 Stat. 681, 30 U.S.C. §351 *et seq*
- Mineral Leasing Act of 1920, 30 U.S.C. §181 *et seq*, as amended
- Mineral Materials Disposal Act of 1947, 30 U.S.C. §601 *et seq*
- Mining Law of 1872, 30 U.S.C. §22 *et seq*.
- Mining Activity Within National Park Service Areas, P.L. 94-429, 90 Stat. 1342 16 U.S.C. §1901 *et seq*.
- National Trails System Act, P.L. 90-543, 82 Stat. 919, 16 U.S.C. §§1241-1251
- National Wildlife Refuge System Administration Act, P.L. 93-509, 88 Stat. 1603, 16 U.S.C. §668dd-ee
- Noise Control Act of 1972 as amended, P.L. 92-574, 42 U.S.C. §4901 *et seq*.
- Outdoor Recreation Coordination Act of 1963, P.L. 88-29, 77 Stat. 49
- Outer Continental Shelf Lands Act, P.L. Chapter 345, 67 Stat. 462, 43 U.S.C. §1331 *et seq* and §1801 *et seq*
- Payment in Lieu of Taxes Act, P.L. 94-565, 90 Stat. 2662, 31 U.S.C. §6901 *et seq*.
- Policies on Construction of Family Housing for Government Personnel, OMB A-18
- Procedures for Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory, E.S. 80-2, 08/15/80, 45 FR 59191
- Revised Statute 2477, Right-of-way across Public Lands, Act of July 26, 1866, 43 U.S.C. §932 (1976), repealed by FLPMA §706(a) October 21, 1976
- Surface Mining Control and Reclamation Act, P.L. 95-87, 91 Stat. 445, 30 U.S.C. § 1201 *et seq*.
- Surface Resources Use Act of 1955, 30 U.S.C. §601 *et seq*
- Surface Transportation Assistance Act of 1982, 96 Stat. 2097, 23 U.S.C. §§101 and many others
- Toxic Substances Control Act, P.L. 94-469, 90 Stat. 2003, 15 U.S.C. §2601
- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, P.L. 91-646, 84 Stat. 1894, 42 U.S.C. §4601 *et seq*.
- Urban Park and Recreation Recovery Act of 1978, P.L. 95-625, 92 Stat. 3467, 16 U.S.C. §2501 *et seq*.
- Wild and Scenic Rivers Act, P.L. 90-542, 82 Stat. 906, 16 U.S.C. §§1271-1287
- Wilderness Act, P.L. 88-577, 78 Stat. 890, 16 U.S.C. §§1131-1136
- Wildfire Disaster Recovery Act, P.L. 101-286
- Wildlife Suppression Assistance Act, P.L. 101-11, 42 U.S.C. §1856m, 1856p

## APPENDIX D: LOCAL ZONING ORDINANCES

The inland buffer zone (37,849 acres that are a mixture of private and governmental ownership) is to be managed to preserve the setting of the Lake Superior shoreline and the inland lakes, protect the watersheds and streams, and permit harvesting of timber under a program of sustained-yield forest management. ForestLand Group, Limited Liability Corporation (19,954 acres) and the state of Michigan (13,824 acres) own most of the land in the inland buffer zone. The remaining land in the inland buffer zone is owned by private landowners (2,016 acres), or by the National Park Service (2,055 acres). Local zoning regulates the density, type, location, and character of private development in the inland buffer zone. Alger County, Burt Township, and the city of Munising maintain the authority to regulate land use on all private lands in the inland buffer zone. Protection through local zoning allows for reasonable use of private land, including harvesting of timber, and will help to protect the lakeshore's natural and cultural resources by controlling the intensity and locations of appropriate uses.

Portions of zoning ordinances that relate to the inland buffer zone for Alger County, Burt Township, and the city of Munising are included in this appendix.

### **Interim Zoning Ordinance of Munising Township, the County of Alger, Michigan Munising Township Zoning Board, adopted April 30, 2002**

#### APPLICATION OF DISTRICT REGULATIONS ONLY WITHIN THE BOUNDARIES OF THE INLAND BUFFER ZONE (IBZ) OF THE PICTURED ROCKS NATIONAL LAKESHORE (PRNL)

Any requests for any activities such as zoning amendments, conditional uses, variances, or Class A designation affecting property within

the PRNL-IBZ shall be provided to the Superintendent of the Pictured Rocks National Lakeshore. The Superintendent shall be provided 30 days from receipt of the request to provide the appropriate zoning body with his written comments regarding the request. No final action shall be taken on the request until such comments are received or until the 30 days have elapsed.

The Superintendent must be provided a written notice by the Zoning Administrator of any variance granted under, or exception made to the application of, a zoning ordinance or amendment. The Superintendent must be provided a copy of every zoning compliance permit that authorizes any use or development of lands within the boundaries of the PRNL.

Parcels of land which were described in a recorded plat or by a recorded deed prior to the adoption of the Zoning Amendment: Changes in the Pictured Rocks National Lakeshore Buffer Zone (2 June 1986), shall be exempt from the lot size and lot width regulations of this ordinance.

All signs within the Inland Buffer zone are subject to laws and regulations related to outdoor signs. The following additional sign restrictions apply, and, where they conflict with the existing sign ordinances, they supersede them.

All signs must be subdued in appearance, harmonizing in design and color with the surroundings. Signs may not be illuminated by neon or flashing devices.

Sign restrictions are established in two categories: on-premises and off-premises.

An off-premises sign is located off the property for which the sign information is provided, in a location visible from a road or highway. Three types are permitted: safety signs or

symbols, public site identification signs, and commercial directories. Commercial directories for permitted commercial uses may be established at various lakeshore access road intersections along H-58 and Michigan-77.

On-premises signs within the Inland Buffer Zone must be limited to public site identification signs, business identification signs, and 911 emergency signs. One such sign is allowed per property (excluding the 911 emergency sign), and it must be on the premises and relate to the use of those premises. Posting and Trespassing signs are exempt. On-premises signs must be a minimum of 15 feet from the street line or road. One name plate or sign, not illuminated, equal to or less than 3' x 2' (six square feet) is permitted, excluding the 911 emergency sign. One temporary sign, not illuminated, equal to or less than 3' x 2' (six square feet) advertising the sale, lease, or rental of the property is permitted.

Applicants for zoning compliance permits within the IBZ shall be informed in writing by the Zoning Administrator of any development limitations indicated by the Critical Resources and Development Limitations Map of the Inland Buffer Zone as adopted by the National Park Service in the Land Protection Plan for PRNL. The Zoning Administrator shall also inform other appropriate authorities, such as the Township Health Department and the Michigan DNR, of the permit request. Reference to the Critical Resources Development Limitations by the Zoning Administrator shall be for informational purposes only in order to inform the applicant and other agencies of possible development problems. The Critical Resources Development Limitations Map shall not be used in determining if a zoning compliance permit is to be issued.

If a recreational vehicle or mobile home is occupied on a site for more than 45 days in any one year, it must meet all the requirements

for a residential dwelling, including a permanent foundation and the same water and sewage disposal requirements of those residential dwellings constructed on site.

A recreational vehicle or mobile home may be occupied in the IBZ for a period of 45 days or less in any one year without meeting the requirements of residential dwelling. These units must be self-contained and not have external sources of electricity, natural gas, propane, telephone, sewage disposal, potable water, or other services. Sewage disposal must be done at approved sanitary dumping stations. Where such a vehicle is stored and not occupied in the IBZ, it must be parked near the permanent dwelling and screened by vegetation where possible.

Any land use or structure which does not conform to a provision or requirement of this ordinance, but which was lawfully established in accordance with state and local statutes prior to the effective date of the adoption of the Zoning Amendment: Changes in the Pictured Rocks National Lakeshore Buffer Zone (2 June 1986), shall be considered a nonconforming use. As such, they are subject to all the nonconforming use provisions of this ordinance. Violation of Public Law 89-668 prior to the adoption of the aforementioned Amendment shall not disqualify a land use or structure from status as a nonconforming use under this ordinance.

## EXEMPTIONS

The location of pipes, wires, poles, and generating and transmission equipment of public utilities or railroad tracks regulated by the State of Michigan or by the United States are exempt from regulation under this Ordinance.

**ZONING DISTRICTS**

For the purpose of this Ordinance, Munising Township is hereby divided into the following zoning districts, which shall be known by the following respective symbols and names:

R1	Residential 1
R2	Residential 2
RR	Rural Residential
LS/R	Lake Shore/River
TD	Town Development
T/RP	Timber/ Resource Production
AP	Agriculture Production
C	Commercial
I	Industrial
IBZ-RM	Inland Buffer Zone –Resource Management
IBZ-RR	Inland Buffer Zone–Rural Residential
IBZ-SD/TP	Inland Buffer Zone–Seasonal Dwelling/Timber Production
IBZ-SC	Inland Buffer Zone—Seasonal Commercial

*(Note: only the IBZ zones have been reproduced in this document)*

**Inland Buffer Zone—Resource Management**

Intent: The IBZ –RM (Inland Buffer Zone–Resource Management) District is intended to establish and maintain for low intensity use those areas of the Pictured Rocks National Lakeshore Inland Buffer Zone, as established by PL 89-668, which, because of their location, accessibility, soils, drainage, and other characteristics, are suitable for the development of single-family seasonal and year-round residences, for timber management and agricultural purposes, and for outdoor recreational uses.

**Permitted Principle Uses:**

- Single-family dwellings
- Mobile home where placed on a permanent foundation and meeting the same water

and sewage disposal requirements of dwellings (except as provided in Section 9.6)

- The growing and harvesting of timber products
- Agricultural production operations, including crop cultivation, pastures, orchards, farmsteads, and similar uses (except feedlots, poultry farms, and fur farms)
- Outdoor recreational uses, such as hunting, fishing and trapping

**Conditional Uses:**

None

**Inland Buffer Zone—Rural Residential**

Intent: The IBZ-RR (Inland Buffer Zone–Rural Residential) District is intended to establish and maintain a low-intensity use, rural residential environment for those areas of the Pictured Rocks National Lakeshore Inland Buffer Zone, as established by PL 89-668, which, because of their location, accessibility, soils, drainage, and other characteristics, are suitable for the development of single-family, year-round dwellings.

**Permitted Principle Uses:**

- Single-family dwellings, mobile homes when placed on a permanent foundation and meeting the same water sewage disposal requirements of dwellings (except as provided in Section 9.6)
- The growing and harvesting of timber products
- Outdoor recreational uses, such as hunting, fishing, and trapping

**Conditional Uses:**

None

**Inland Buffer Zone—Seasonal Dwelling/Timber Production**

Intent: The IBZ-SD/TP (Inland Buffer Zone–Seasonal Dwelling/Timber Production)

district is established to maintain low intensity and seasonal use those areas of the Pictured Rocks National Lakeshore Inland Buffer Zone, as established by PL 89-668, which, because of their location, accessibility, soils, drainage, and other characteristics, are suited for recreational uses.

Permitted Principle Uses:

The growing and harvesting of timber on a scientifically managed basis  
Outdoor recreational uses, such as hunting, fishing, and trapping  
Single-family seasonal dwellings and mobile homes

Conditional Uses:

None

**Inland Buffer Zone—Seasonal Commercial**

Intent: The IBZ-SC (Inland Buffer Zone—Seasonal Commercial) district is established to maintain areas of the Pictured Rocks National Lakeshore Inland Buffer Zone, as established by PL 89-668, to service the needs of Lakeshore visitors and other tourists in rural areas. Uses should be conceived and planned so that they will not require year-round road access and other services commonly found in more accessible areas.

Permitted Principle Uses:

Campgrounds  
Tourist cabins  
Gasoline service stations, convenience stores providing gasoline, goods, and similar items needed by travelers. Commercial uses should be limited to those needed to provide necessary services to the Lakeshore visitor, and so located so as not to detract from the visitor’s enjoyment of the Lakeshore.

Conditional Uses:

None

**Burt Township Zoning Ordinance of the Township of Burt, County of Alger, Michigan (October 1995)**

**SECTION 318 DISTRICT SD/TP-IBZ:  
SEASONAL DWELLING/TIMBER  
PRODUCTION—INLAND BUFFER ZONE**

(A) Intent: To establish and maintain for low intensity and seasonal use those areas within the Inland Buffer Zone of the Pictured Rocks National Lakeshore as established by Public Law 89-668, which because of their location, accessibility, soils, and other characteristics are best suited for timber production, seasonal dwelling and outdoor recreational uses.

(B) Permitted principal uses:

1. Growing and harvesting of timber on a sustained yield basis.
2. Outdoor recreational uses such as hunting, fishing and trapping.
3. Single-family seasonal dwelling (government services may not be provided on a year-round basis or may not be provided at all to some locations within this district).
4. Mobile homes.
5. Stabling two horses per 20 acres.

(C) Permitted Accessory Uses: The following are permitted accessory uses:

1. Accessory structures normally associated with single-family dwellings, such as private garage, shed for yard tools, playhouse, pens, boat house, swimming pools, recreational docks, sauna, and woodshed.

(D) Conditional Uses Authorized by Permit:

The following uses for land and structures may be permitted in this District by application for and the issuance of a Conditional Use Permit as provided for in Article VII and Article VIII.

1. None.

**SECTION 319 DISTRICT RM-IBZ:  
RESOURCE MANAGEMENT—INLAND  
BUFFER ZONE**

(A) Intent: To establish and maintain for low intensity use those areas of the Pictured

Rocks National Lakeshore Inland Buffer Zone as established by Public Law 89-668, which because of their location, accessibility, soils, drainage, and other characteristics are suitable for the development of single-family seasonal and year-round residences, for timber management and agricultural purposes, and for outdoor recreational uses.

- (B) Permitted Principal Uses:
1. Single-family dwellings.
  2. Mobile homes placed on a permanent foundation.
  3. Growing and harvesting of timber on a sustained yield basis.
  4. Agricultural production operations, including crop cultivation, pastures, orchards, farmstead, and similar uses (except feedlots, poultry farms and fur farms).
  5. Outdoor recreational uses such as hunting, fishing, and trapping.
- (C) Permitted Accessory Uses: The following are permitted accessory uses:
1. Accessory structures normally associated with single-family dwellings, such as private garage, shed for yard tools, playhouse, pens, boat house, swimming pools, recreational docks, sauna, and woodshed.
- (D) Conditional Uses Authorized by Permit: The following uses for land and structures may be permitted in this District by application for and the issuance of a Conditional Use Permit as provided for in Article VII and Article VIII.
1. None.

**SECTION 320 DISTRICT RR-IBZ: RURAL RESIDENTIAL—INLAND BUFFER ZONE**

- (A) Intent: To establish and maintain a low intensity use rural residential environment for those areas of the Pictured Rocks National Lakeshore Inland Buffer Zone as established by Public Law 89-668, which because of their location, accessibility, soils, drainage, and other characteristics are suitable for the development of single-family, year-round dwellings.

- (B) Permitted Principal Uses:
1. Single-family dwellings.
  2. Mobile homes placed on a permanent foundation.
  3. Growing and harvesting of timber.
  4. Outdoor recreational uses such as hunting, fishing and trapping.
- (C) Permitted Accessory Uses: The following and permitted accessory uses:
1. Accessory structures normally associated with single-family dwellings, such as private garage, shed for yard tools, playhouse, pens, boat house, swimming pools, recreational docks, sauna, and woodshed.
- (D) Conditional Uses Authorized by Permit: The following uses for land and structures may be permitted in this District by application for and the issuance of a Conditional Use Permit as provided for in Article VII and Article VIII.
1. None.

**SECTION 321 DISTRICT SC-IBZ: SEASONAL COMMERCIAL—INLAND BUFFER ZONE**

- (A) Intent: To establish and maintain areas for seasonal commercial uses within the Pictured Rocks National Lakeshore Inland Buffer Zone as established by Public Law 89-668 to service the needs of lakeshore visitors and other tourists in rural areas. Uses should be conceived and planned so that they will not require year-round road access and other services commonly found in more accessible areas. Commercial uses should be limited to those needed to provide necessary services to the lakeshore visitor and so located so as not to detract from the visitor's enjoyment of the lakeshore.
- (B) Permitted Principal Uses:
1. Campgrounds
  2. Tourist cabins.
  3. Convenience stores providing gasoline, food and similar items needed by the traveler.
- (C) Permitted Accessory Uses: The following are permitted accessory uses:

1. Accessory structures customarily associated with campgrounds, tourist cabins, and convenience stores.

(D) Conditional Uses Authorized by Permit: The following uses for land and structures may be permitted in District by application for the issuance of a Conditional Use Permit as provided for in Article VII and Article VIII.

1. None.

**SECTION 322 DISTRICT PR: PICTURED ROCKS DISTRICT**

(A) Intent: This district includes the lands of the shoreline zone of the Pictured Rocks National Lakeshore. The shoreline zone was established by Public Law 89-668 to preserve the scenery and outstanding natural features and “to provide the benefits of public recreation.” It is the intent of the Congress that the National Park Service manage and develop the Pictured Rocks National Lakeshore to protect the area’s scenery and natural features and provide for public recreation.

(B) Permitted Principal Uses:

1. Recreational facilities and other appropriate facilities and services as provided for by Public Law 89-668 and the *Pictured Rocks National Lakeshore General Management Plan*.

(C) Permitted Accessory Uses: The following are permitted accessory uses:

1. Accessory structures normally associated with recreational structures and uses and as permitted by Public Law 89-668 and the *Pictured Rocks National Lakeshore General Management Plan*.

(D) Conditional Uses Authorized by Permit: The following uses of land and structures may be permitted in this application for and issuance of a Conditional Use Permit as provided for in Article VII:

1. None.

**SECTION 413: RECREATIONAL VEHICLE OR MOBILE HOME LOCATED WITH INLAND BUFFER ZONES**

(A) If a recreational vehicle or mobile home is occupied on a site for more than 14 days in any one year, it must meet all the requirements for a residential dwelling, including a permanent foundation and the same water and sewage disposal requirements of those residential dwellings constructed on site.

(B) A recreational vehicle or mobile home may be occupied in the Inland Buffer Zone (IBZ) for a period of 14 days or less in any one year without meeting the requirements of a residential dwelling. These units must be self-contained and not have external sources of electricity, natural gas, propane, telephone, sewage disposal, potable water, or other services. Sewage disposal must be done at approved sanitary dumping stations. Where such a vehicle is stored and not occupied in the IBZ, it must be parked near the permanent dwelling and screened by vegetation where possible.

**SECTION 507 INLAND BUFFER ZONE DISTRICTS SIGN REGULATIONS**

All signs within the Inland Buffer Zones (RM-IBZ, RR-IBZ, SD/TP-IBZ) are subject to the appropriate regulation as provided in Article V Signs with the following exceptions and provisions:

(A) All signs must be subdued in appearance, harmonizing in design and color with the surroundings. Signs may not be illuminated by neon or flashing devices.

(B) Sign restrictions are established in two categories, on-premises and off-premises. An off-premises sign is located off the property for which the sign information is provided, in a location visible from a road or highway. Three types of off-premises signs are permitted: safety signs or symbols, public site identification signs, and commercial directories.

Commercial directories for permitted commercial uses may be established at

various lakeshore access road intersections along H-58 and Michigan 77.

On-premises sign that can be seen from Inland Buffer Zone roads must be limited to public site identification signs and business identification signs. One such sign is allowed per property, and it must be on the premises and relate to the use of those premises. Posting and trespassing signs are exempt. On-premises signs must be at least 15 feet from the street line or road. One located on the right-of-way and shall not interfere with traffic visibility.

**SECTION 1005 ZONING AND COMPLIANCE PERMIT**

(C) Applicants for zoning permits within the Buffer Zone shall be informed in writing by the Zoning Administrator of any development limitations indicated by the Critical Resources and Development Limitations Map of the Inland Buffer Zone as adopted by the National Park Service in the Land Protection Plan for the Pictured Rocks National Lakeshore. The Zoning Administrator shall also inform other appropriate authorities such as the County Health Department and the Michigan DNR of the permit request. Reference to the Critical Resources Development Limitations map by the Zoning Administrator shall be for informational purposes only in order to inform the applicant and other agencies of possible development problems. The Critical Resources and Development Limitations Map shall not be used in determining if a zoning permit is to be issued.

	Minimum Yard Requirements			Maximum Height* (feet)
	Front (feet)	Side (feet)	Rear (feet)	
SD/TP—IBZ	150	50	50	30
RM—IBZ	100	50	50	30
RR—IBZ	50	30	30	30
SC—IBZ	200	50	50	30
PR	--	--	--	--

\*Height restrictions do not apply to farm structures.

District	Minimum Lot Size	Minimum Lot Width
SD/TP—IBZ	20 acres	660
RM—IBZ	10 acres	330
RR—IBZ	2 acres	200
SC—IBZ	10 acres	330
PR	--	--

**City of Munising Zoning Ordinance (July, 1986)**

**SECTION 22: DD-2 DEFERRED DEVELOPMENT DISTRICT (this section amended March 1989)**

INTENT: To establish and maintain a low intensity use rural residential environment for those areas of the Pictured Rocks National Lakeshore Inland Buffer Zone, as established by Public Law 89-668, which because of their location, accessibility, soils, drainage, and other characteristics are suitable for the development of single family and seasonal dwellings.

22.1 Principle Uses: Single family dwellings, seasonal dwellings, mobile homes when placed on a permanent foundation and meeting the same and water and sewage disposal requirements of dwellings (except as provided in Section 24.2 (F), the growing and harvesting of timber, agriculture that is limited to crop production for sale or personal use, and animals and livestock for personal use,

and outdoor recreational uses such as hunting, fishing, and trapping.

22.2 Conditional Uses: A. Home Occupations.

SECTION 23: PL PUBLIC LANDS DISTRICT

INTENT: To establish and preserve areas for certain public purposes.

23.1 Permitted Principal Uses: Any governmental or proprietary function conducted by any governmental agency or publicly-owned corporation which is authorized to conduct such function, including, but not limited to, government offices, schools, parks, open space, and utility buildings and facilities.

Section 24: SCHEDULE OF GENERAL REGULATIONS

24.1 Concerning regulations to limit heights, bulk, density, area and placement by district, no building or structure or part thereof shall hereafter be erected, constructed, altered or maintained, and no new use or change in use shall be made or maintained of any building structure or land, in part, thereof, except in conformity with the Schedule of General Regulation or as otherwise specifically provided in this Ordinance.

24.2 Lakeshore Inland Buffer Zone. The following regulations shall apply only within the boundaries of the Pictured Rocks National Lakeshore Inland Buffer Zone and when they are in conflict with other regulations of this Ordinance, they shall supersede them:

A. Any requests for zoning amendments, variances, or Class A designations affecting property within the Inland Buffer Zone shall be provided to the Superintendent of the National Lakeshore. The Superintendent shall be provided 30 days from receipt of the request to provide the appropriate body with his comments regarding the request. The superintendent must determine if the proposal would adversely affect the

lakeshore and if its approval would be contrary to the lakeshore purposes. The superintendent must advise the zoning body whether or not the intended use is proper, requires modification and mitigation measures, or would subject the property to civil or criminal sanctions or acquisition by condemnation. No final action shall be taken on the request until such comments are received or until the 30 days has elapsed.

- B. Legally created parcels of land which have been described in a recorded plat or by a recorded deed prior to the effective date of this Ordinance, shall be exempt from the lot size and lot width regulations of this Ordinance.
- C. All signs within the Inland Buffer Zone are subject to other provisions of this Ordinance relating to outdoor signs. The following additional sign restrictions apply, and where they conflict with the existing sign regulations, they supersede them. All signs must be subdued in appearance, harmonizing in design and color with the surroundings. Signs may not be illuminated by neon or flashing devices.

Sign restrictions are established in two categories, on-premises and off-premises. An off-premises sign is locate off the property for which the sign information is provided, in a location visible from a road or highway. Three types of off-premises signs are permitted: safety signs or symbols, public site identification signs, and commercial directories. Commercial directories for permitted commercial uses may be established at various lakeshore access road intersections along H-58.

On-premises signs that can be seen from Inland Buffer Zone roads must be limited to public site identification signs and business identification signs. One such sign is allowed per property, and it must be on the premises and relate to the use of those premises. Posting and trespassing

signs are exempt. On-premises signs must be at least 15 feet from the street line or road. One name plate or sign, not illuminated, equal to or less than 3' x 2' (6 square feet) is permitted. One temporary sign, not illuminated, equal to or less than 3' x 2' (6 square feet) advertising the sale, lease, or rental of the property is permitted.

- D. Applicants for zoning permits within the Buffer Zone shall be informed in writing by the zoning administrator of any development limitation indicated by the Critical Resources and Development Limitations Map of the Inland Buffer Zone as adopted by the National Park Service in the Land Protection Plan for the Pictured Rocks National Lakeshore. The zoning administrator shall also inform other appropriate authorities such as the County Health Department and the Michigan DNR of the permit request. Reference to the Critical Resources and Development Limitations may by the zoning administrator shall be for informational purposes only in order to inform the applicant and other agencies of possible development problems. The Critical Resources and Development Limitations map shall not be used in determining if a zoning permit is to be issued.
- E. If a recreational vehicle or mobile home is occupied on a site for more than 30 days in any one year, it must meet all the requirements for a residential dwelling, including a permanent foundation and the same water and sewage disposal requirements of those residential dwellings constructed on site.
- F. A recreational vehicle or mobile home may be located in the Inland Buffer Zone (IBZ) for a period of 30 days or less in any

one year without meeting the requirements of a residential dwelling. These units must be self-contained and not have external sources of electricity, natural gas, propane, telephone, sewage disposal, potable water, or other services. Sewage disposal must be done at approved sanitary dumping stations. Where such a vehicle is stored and not occupied in the IBZ, it must be parked near the permanent dwelling and screened, where possible, by vegetation.

- G. Any land use or structure which does not conform to a provision or requirement of this Ordinance but which was lawfully established in accordance with state and local statutes prior to the effective date of this ordinance shall be considered a nonconforming use. As such, they are subject to all the nonconforming use provision of this Ordinance. Violation of Public Law 89-668 prior to the effective date of this Ordinance shall not disqualify a land use or structure from status as a nonconforming use under this ordinance.

District	Minimum Yard Requirements			Maximum Height*
	Front (feet)	Side (feet)	Rear (feet)	
DD-2	30 ft.	15 ft.	30 ft.	30 ft.
PL	None	None	None	None

\*Height restrictions do not apply to farm structures.

District	Minimum Lot Size	Minimum Lot Width
DD-2	1 Acre	100 ft.
PL	None	None

## APPENDIX E: RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS GENERAL MANAGEMENT PLAN

The *General Management Plan* for Pictured Rocks National Lakeshore is the first of several public agency planning update efforts in the Upper Peninsula. Listed below, by organization, are plans that have influenced or will be influenced by this *General Management Plan*.

### EASTERN UPPER PENINSULA PARTNERS IN ECOSYSTEM MANAGEMENT (EUPPEM)

This partnership was formed in July 1992 in response to a need to deal with landscape management issues that cross ownership boundaries and to address concerns for the maintenance of biodiversity. The partnership functions on the premise that the represented organizations will be more likely to choose landscape management actions that are ecologically sound if they have the benefit of shared information and coordinated opportunities.

The partnership's mission is to facilitate complementary management of public and private lands, for all appropriate land uses, through a large-scale landscape-ecological approach to maintaining and enhancing sustainable representative ecosystems, in the Eastern Upper Peninsula of Michigan.

This collaborative partnership among the primary land managers in the eastern Upper Peninsula in Michigan has contributed greatly to the success of ecosystem management in the Upper Peninsula. The partners meet regularly to discuss issues of mutual interest concerning the lands and ecosystem for which they are responsible.

The members of this partnership manage 66% of the 3.9 million acres comprising the Eastern Upper Peninsula landscape. They are the U.S.

Forest Service (Hiawatha National Forest), U.S. Fish and Wildlife Service (Seney National Wildlife Refuge), Michigan Department of Natural Resources, ForestLand Group, Limited Liability Corporation, The Nature Conservancy, the National Park Service (Pictured Rocks National Lakeshore), Champion International, and Mead Corporation.

### U.S. FOREST SERVICE

Hiawatha National Forest encompasses about 880,000 acres and receives 1.5 million recreation visitors per year. Visitors enjoy hiking, biking, sightseeing, camping, winter recreation, hunting, and fishing opportunities.

The Munising District of the Hiawatha National Forest will begin revision of its *General Forest Management Plan* in October 2001. The proposed new Forest Service planning rule focuses on the sustainability of ecosystems, societies, and economies; greater use of science; collaboration among the Forest Service and other entities; and dynamic forest plans that are monitored and adjusted periodically.

This *General Management Plan* is compatible with the *Forest Management Plan* (October 1986) and is expected to be compatible with the new plan. A Forest Service planner was involved in developing alternatives for the *General Management Plan*.

### U.S. FISH AND WILDLIFE SERVICE

The Seney Wildlife Refuge *Comprehensive Conservation Plan* provides strategies to ensure: that breeding and migration habitat for migratory birds is protected, habitat for resident wildlife is provided, endangered and

threatened species are protected, biodiversity is provided, and public opportunities for outdoor recreation and environmental education are provided. A new comprehensive conservation planning effort is scheduled to begin in 2002.

The *General Management Plan* is compatible with the existing Comprehensive Conservation Plan for the Seney Wildlife Refuge.

### **MICHIGAN DEPARTMENT OF NATURAL RESOURCES**

The Forest Resource Management Division provides for the protection, integrated management, and responsible use of a healthy, productive, and undiminished forest resource base for social, recreational, environmental, and economic benefits.

The Superior State Forest is divided into management units composed of about 200 compartments of 1,000 to 3,000 acres each. Some compartments of the Shingleton Management Unit of the Lake Superior State Forest are in the inland buffer zone of the national lakeshore. Compartments are inventoried on a 10-year cycle, and each year foresters inventory one-tenth of the state forest. The information gathered includes size, age and health of trees; wildlife and recreational use and need; and social factors, such as proximity of the area to roads and neighborhoods.

This *General Management Plan* is compatible with the management prescriptions for the Shingleton Management Unit compartments that are within the inland buffer zone.

### **FORESTLAND GROUP, LIMITED LIABILITY CORPORATION**

Kamehameha Schools certified their *Forest Management Plan* in 1994 with the revision of

the Commercial Forest Act. The 17,000 acres in the inland buffer zone owned by Kamehameha Schools is being sold to the ForestLand Group Limited Liability Corporation. On-the-ground management of these lands and resources may change as a result of this new ownership.

### **THE NATURE CONSERVANCY**

The Nature Conservancy manages several land tracks in the Upper Peninsula and is a key partner in the innovative collaboration with public and private partners to preserve the Great Lakes ecosystem. The conservancy is no longer focusing solely on protecting the rare and natural communities but also the declining, vulnerable, and even common elements that encompass the diversity of life.

### **NATIONAL PARK SERVICE**

#### **Pictured Rocks National Lakeshore GPRA Plans (1999)**

The Government Performance and Results Act (GPRA) directs all federal agencies to produce a strategic plan and annual performance plans. A park system unit strategic plan describes the unit's mission, mission goals, and measurable long-term goals and includes a resource assessment. An annual performance plan lists annual performance goals (the outcomes expected to be achieved in a given fiscal year) and includes an annual work plan (inputs and outputs) to achieve the annual goal.

The planning team used the national lakeshore's mission goals in developing this *General Management Plan*. In the future, GPRA plans will tier off of the *General Management Plan*, building on the mission, mission goals, and management prescriptions described here. The adequacy of the *General Management Plan* will also be continually

reevaluated in the strategic planning process for Pictured Rocks National Lakeshore.

### **Pictured Rocks National Lakeshore Land Protection Plan (1993)**

Land protection plans are developed for each national park system unit containing nonfederal lands or interests that may be subject to acquisition. Land acquisition is guided by a land protection plan. The national lakeshore's *Land Protection Plan* addresses the use of nonfederal lands in the inland buffer zone. The plan proposes two primary methods for protecting lakeshore values on these lands: (1) protect most state lands through continued management by the Michigan Department of Natural Resources, and (2) protect most private lands through zoning ordinances that would establish one district emphasizing timber harvesting, two districts recognizing the low-density residential use patterns in the city of Munising and the Munising Township near Munising and Melstrand, and one district for seasonal commercial use to serve the needs of the lakeshore visitors. The protection afforded by local zoning ordinances may be supplemented by federal and state land use regulations.

### **LOCAL POLICIES**

Alger County, Burt Township, and the city of Munising maintain authority to regulate through land use ordinances all private lands in the lakeshore boundary. These local jurisdictions have adopted zoning ordinances that apply to privately owned lands within the national lakeshore. Local zoning ordinances limit the density, type, location, and character of private development. Zoning often can effectively control development. Local zoning is most likely to meet federal management objectives when some reasonable economic uses of the land are compatible with protection needs. Zoning does not ensure permanent resource protection because it may be changed or variances may be granted.

The enforcement of zoning ordinances can provide an adequate level of protection for most of the private land in the inland buffer zone, assuming that (1) the regulations are consistent with achieving the congressionally intended purposes of this portion of the lakeshore and (2) variances are strictly controlled.

The National Park Service will be closely involved in the development of revised zoning ordinances and/or amendments that apply to private lands in the national lakeshore.

## APPENDIX F: BACKGROUND FOR DEVELOPMENT OF THE PLAN

Work on the Pictured Rocks *Draft General Management Plan and Wilderness Study Environmental Impact Statement* began in the summer of 1999. The planning team consisted of national lakeshore staff, specialists from the NPS Denver Service Center, and additional consultants. Throughout the planning process, newsletters were distributed and meetings were held (described above) to solicit the views and concerns of interested citizens.

Early in the planning process the national lakeshore's purpose and significance were reaffirmed, legislative mandates and constraints were considered, and issues to be addressed by the plan were identified.

The next major step was to develop a range of alternatives for managing the national lakeshore. The planning team gathered and studied information on national lakeshore resources, visitor use, and planning issues. With this information, the team developed five preliminary or draft alternatives (alternatives A through E) for managing visitor use and natural and cultural resources. These alternatives were presented to the public in a newsletter and public meetings, and comments from the public were collected and reviewed.

The next step was to identify a preferred alternative. The five draft alternatives that had been reviewed by the public were evaluated, as was a "no-action" alternative. The planning team used an evaluation process called "Choosing by Advantages". This process evaluates different choices (in this case, the six alternatives) by identifying and comparing the relative advantages of each according to a set of criteria. The criteria were based on national lakeshore purpose, significance, laws and policies, and public concerns and comments. The criteria are listed below:

- protects natural resources and processes
- protects cultural resources
- provides for a range of appropriate outdoor recreational activities
- provides convenient access to significant national lakeshore features
- preserves or enhances wilderness values
- provides for efficient and sustainable operations
- provides for congressionally mandated extraction, visitor activities, and development in the inland buffer zone
- provides economic benefits to nearby communities

The team identified the relative advantages of each alternative for each of the nine criteria. Each advantage was given a point value that reflected its importance. Then, by adding up the scores for each alternative the team was able to determine how the alternatives compared overall. Costs of implementing the alternatives were then compared to examine the relationships between advantages and costs. The relative advantages of the alternatives for each criterion are summarized below.

*Protects natural resources and processes* X The team found that alternative B best met this criterion because habitat and watershed protection would be extended to a much larger area.

*Protects cultural resources* X Alternative E would provide slightly better protection of cultural resources than A, B, and D. In alternative E motorized access to the Beaver Lakes and Beaver Basin would be eliminated and a relatively large wilderness area would be proposed, providing better protection of backcountry resources.

*Provides for a range of appropriate outdoor recreational activities* X Alternative C was rated best according to this criterion due to new campgrounds, campground

improvements, and new opportunities for day use. Alternative A was the next best alternative with respect to this criterion, followed by alternative D. The no-action alternative and alternative E were rated lowest.

*Provides convenient access to significant national lakeshore features X* Alternative C provided the most convenient access to significant national lakeshore features due to extensive road improvements and new roads. Alternative C was followed by alternative A and then alternative B. Alternative E was the least preferred alternative due to road closures and reduced access for motorized boats.

*Preserves or enhances wilderness values X* Alternative E would best preserve or enhance wilderness values because it proposed the largest designated wilderness. Alternative D would also preserve wilderness values over the long term but over a smaller area. Alternative C was rated lowest for this criterion.

*Provides for efficient and sustainable operations X* The alternatives did not vary greatly with

respect to this criterion. Alternative C would provide the most efficient and sustainable operations, but it did not have a large advantage over the other alternatives. The no-action alternative was least preferred.

*Provides for congressionally mandated extraction, visitor activities, and development in the inland buffer zone X* The no-action alternative would best provide for congressionally mandated activities in the inland buffer zone because no additional land would be purchased and because no areas would be managed under the primitive or pristine prescriptions. The no-action alternative had only a slight advantage over alternatives C and D.

*Provides economic benefits to nearby communities –* Alternative C, followed by the no-action alternative, would provide the most economic benefits to nearby communities. The alternatives did not differ much according to this criterion, however.

## GLOSSARY

**Action alternative:** An alternative that proposes a change to existing conditions or current management direction. The environmental consequences of an action alternative are analyzed in relation to the no-action alternative.

**Adaptive use:** A use for a structure or landscape other than its historic use, normally entailing some modification of the structure or landscape.

**Advisory Council on Historic Preservation:** An independent federal agency with statutory authority to review and comment on federal actions affecting properties listed on or eligible for the National Register of Historic Places.

**Affected environment:** The existing biological, physical, cultural, social, and economic conditions that are subject to both direct and indirect changes as a result of actions described in the alternatives under consideration.

**Alternatives:** A reasonable range of options that can accomplish an agency's objectives.

**Anthropology:** The scientific study of the human condition, including cultural, biological, and physical adaptation over time and in various natural and social environments.

**Archeology:** The scientific study, interpretation, and reconstruction of past human cultures from an anthropological perspective based on the investigation of the surviving physical evidence of human activity and the reconstruction of related past environments.

**Best management practices:** Schedules of activities, prohibitions of practices, maintenance procedures, and other

management practices to prevent or reduce resource degradation.

**Council on Environmental Quality (CEQ):** Part of the Executive Office of the president, this office is the "caretaker" of the National Environmental Policy Act.

**Cultural Landscape:** A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are four general kinds of cultural landscapes, not mutually exclusive: historic sites, historic designed landscape, historic vernacular landscape, and ethnographic landscape.

**Cultural Resources:** An aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural practice.

**Cumulative Impacts:** The culmination of the proposed action added to past, present, and reasonably foreseeable future action; actions may be taken by anyone and may occur inside or outside the national lakeshore.

**Designated Wilderness:** See *Wilderness*.

**Ecosystem:** A system that involves the interaction of organisms with their physical environment.

**EUPPEM:** Eastern Upper Peninsula Partners in Ecosystem Management is a collaborative partnership for ecosystem management in the Upper Peninsula. It consists of representatives from the National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, Michigan Department of Natural Resources,

ForestLand Group, Limited Liability Corporation, and The Nature Conservancy.

**EIS:** An environmental impact statement is required by the National Environmental Policy Act to examine a range of federal actions and their potential effects on the environment.

**Endangered Species:** A plant or animal that is in danger of becoming extinct throughout all or part of its range.

**Environmental Education:** Programs that teach students of all ages and disciplines about the national lakeshore's cultural and natural resources; usually means multiple contacts with the same group of learners; curriculum-based education programs are tied to state competency standards.

**Ethnography:** Part of the discipline of cultural anthropology concerned with the systematic description and analysis of cultural systems or lifeways, such as hunting, agriculture, fishing, other food procurement strategies, family life festivals, and other religious celebrations.

**GMP:** General management plan; the broadest level of planning used by the National Park Service; provides an overall direction for future national lakeshore management as well as a framework for managers to use when making decisions about such things as park resources, visitor use, and facilities.

**Harbor of Refuge:** A designated bay that provides protection from storms.

**Historic American Building Survey (HABS)/Historic American Engineering Record (HAER):** an architectural and engineering documentation program that produces a thorough archival record of buildings, structures, and cultural landscapes significant in American history and the growth and development of the built environment.

**Historic Property:** A district, site, structure, or landscape that is significant in American history, architecture, engineering, archeology, or culture; an umbrella term for all entries in the National Register of Historic Places.

**Impacts:** Effects, both beneficial and adverse, of an action on the environment. Direct effects are those occurring at the same time and place as the action itself. Indirect effects occur later in time or are farther removed in distance from the action, yet are reasonably foreseeable.

**Impairment:** The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the future enjoyment of these resources or values.

**Interpretation:** A communication process designed to reveal meanings and relationships of our cultural and natural heritage to the public through first-hand experiences with objects, artifacts, landscapes, or sites; facilitating a connection between the interests of the visitor and the meaning of the national lakeshore by explaining the national lakeshore's purpose and significance; usually a single contact with a group or individual.

**Inland Buffer Zone:** Established to stabilize, protect, and preserve the setting of the Lake Superior shoreline and inland lakes, protect the watersheds and streams, and permit selective logging on a sustained yield basis. Lands in the inland buffer zone are in federal, state, corporate, and other private ownership.

**MDEQ:** Michigan Department of Environmental Quality

**MDNR:** Michigan Department of Natural Resources

**Management prescription:** Management prescriptions specify the desired resource conditions for different areas of the national lakeshore and describe the desired visitor experiences based on resource management concerns and also on a concern to maintain a diversity of experiences for national lakeshore visitors. They integrate resource protection and management with visitor use.

**Mitigation:** An activity designed to avoid, minimize, rectify, eliminate, or compensate for the impacts of a proposed project. A mitigation measure should be a solution to an identified environmental problem.

**Molder:** To allow to decay naturally.

**Motor:** A small compact engine powered by gas, fuel, battery, or other means.

**National Environmental Policy Act (NEPA):** Among other things, this act requires full disclosure of the impacts that would result from a proposed federal action that would have a major effect on the quality of the environment.

**National Register of Historic Places:** The comprehensive list of districts, sites, buildings, structures, and objects of national, regional, state, and local significance in American history, architecture, archeology, engineering, and culture. This list is maintained by the National Park Service under authority of the National Historic Preservation Act of 1966.

**Natural Resources:** Things that occur in their natural state – wildlife, water, forests, etc. Features and values that include plants and animals, water, air, soils, topographic features, geologic features, paleontologic resources, natural quiet, and clear night skies.

**No-Action Alternative:** An alternative in an environmental impact statement that continues current management direction. A no-action alternative is a benchmark against which action alternatives are compared.

**Outreach:** To go beyond the national lakeshore boundary to develop partnerships with other organizations, other government entities, and members of the general public to build relationships that foster stewardship; actively providing information and programs to groups or individuals who are not national lakeshore users.

**Personal Watercraft:** Personal watercraft are not motorboats. They are small vessels, usually less than 16 feet long, that use an inboard motor powering a water jet pump as its primary source of power. Operators can sit, stand, or kneel on the vessels that are designed for high speed and maneuverability. They are commonly called jet skis, waverunners, wave-jammers, wetjets, sea-dos, wetbikes, and surf jets.

**Potential Wilderness:** see *Wilderness*

**Preservation (cultural resources):** The act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape, or object. Work may include preliminary measures to protect and stabilize the property, but generally focuses on the ongoing preservation, maintenance, and repair of historic materials and features rather than extensive replacement and new work.

**Preservation (natural resources):** The act or process of preventing, eliminating, or reducing impacts on natural resources and natural processes.

**Proposed Wilderness:** see *Wilderness*

**Protect:** To keep from harm, attack, or injury; long-term efforts to deter or prevent vandalism, theft, or other acts.

**Recommended Wilderness:** see *Wilderness*

**Record of Decision (ROD):** The public document following the preparation of an environmental impact statement that reflects

the agency's final decision, rationale behind the decision, and commitments to monitoring and mitigation.

**Research Natural Areas:** Research natural areas contain prime examples of natural resources and processes, including significant genetic resources, that have value for long-term observational studies or as control areas for manipulative research taking place outside the national lakeshore. Activities in research natural areas are restricted to nonmanipulative research, education, and other activities that will not detract from an area's research values. Federal land management agencies, including the National Park Service, have established a national network of research natural areas.

**Restoration:** Process of accurately depicting the form, features, and character of a historic property for a particular period of time; may involve removing features from other periods and adding missing features from the restoration period.

**Rehabilitation:** The act or process of making possible an efficient compatible use for a historic structure or landscape through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.

**Scoping:** Planning process that solicits people's opinions on the value of the national lakeshore, issues facing the national lakeshore, and the future of the national lakeshore.

**Shoreline Zone:** Established primarily to preserve the national lakeshore's scenery and outstanding natural features, this zone is in federal ownership.

**Soundscape:** The natural soundscape is the aggregate of all the natural sounds that occur in parks, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive, and can be

transmitted through air, water, or solid materials.

**Stabilization:** Treatment action taken as an intervention to increase the stability or durability of an object when preventative conservation measures fail to decrease its rate of deterioration to an acceptable level or when it has deteriorated so far that its existence is jeopardized.

**State Historic Preservation Officer (SHPO):** An official within each state appointed by the governor to administer the state historic preservation program and carry out certain responsibilities relating to federal undertakings within the state.

**Threatened and Endangered Species:** Species of plants and animals that receive special protection under state and federal laws. Also referred to as listed, endangered, or protected species or species of special concern.

**Treatment:** Work carried out to achieve a particular historic preservation goal.

**U.S.C.:** *United States Code*. Contains the general and permanent laws of the United States.

**Visitor experience:** The perceptions, feelings, and interaction a national lakeshore visitor has in relationship with the environment. Other elements also contribute to the quality of the visitor experience, such as the condition of natural and cultural resources, air quality, transportation, and noise.

**Visitor services:** Providing information and assistance to visitors to facilitate an enjoyable experience at the national lakeshore (e.g., trip planning, emergency response, naturalist programs, etc.); multiple opportunities for visitors to make intellectual and emotional connections to the national lakeshore through such things as walks, talks, roving informal contacts, brochures, exhibits, and other

media; services may be provided onsite or offsite.

**Wilderness:** Areas protected by provisions of the Wilderness Act of 1964. These areas are characterized by a lack of human interference in natural processes; generally, there are no roads, structures, or installations, and the use of motorized equipment is not allowed.

**Designated Wilderness:** Federal land designated by Congress as a wilderness area and a component of the National Wilderness Preservation System where the NPS is required to manage according to the Wilderness Act of 1964.

**Potential Wilderness:** Lands that are surrounded by or adjacent to lands proposed for wilderness designation but that do not themselves qualify for immediate designation due to temporary, non-conforming, or incompatible conditions. If so authorized by Congress, these potential wilderness areas will become designated wilderness upon the

Secretary's determination, published in the *Federal Register*, that they have finally met the qualifications for designation by the cessation or termination of the non-conforming use.

**Proposed Wilderness:** An area that has been studied by the NPS that has been submitted as a proposal by a park or a region to the Director but has not been approved by the Department of the Interior.

**Recommended Wilderness:** An area that has been studied and proposed by the NPS, recommended for wilderness designation by the Secretary to the President, and then transmitted by the President to Congress. Once approved by the Secretary, the area can be considered recommended wilderness for management purposes.

## REFERENCES

### Alger County

2000 "Alger County Online." Accessed on February 2, 2000. Available on Internet at <http://www.algercounty.com/>

### Alger County Chamber of Commerce

2000 "The Official Website of Alger County Chamber of Commerce." Accessed on February 2, 2000. Available on Internet at <http://www.algercounty.com/chamber/topframe.html>

### Bureau of Economic Analysis

1999 "Regional Economic Information System (REIS), REIS Bearfacts for Alger, Michigan 1987-97." Accessed on February 1, 2000. Available on Internet at [http://govinfo.library.orst.edu/cgi-bin/bfact?8\\_05-003.mic](http://govinfo.library.orst.edu/cgi-bin/bfact?8_05-003.mic)

1999 "Regional Economic Information System (REIS), REIS Bearfacts for Michigan 1987-97." Accessed on February 1, 2000. Available on Internet at [http://govinfo.library.orst.edu/cgi-bin/bfact?8\\_05-state.mis](http://govinfo.library.orst.edu/cgi-bin/bfact?8_05-state.mis)

1999 "Regional Economic Information System (REIS), REIS Bearfacts for Alger, Michigan 1996-97." Accessed on February 1, 2000. Available on Internet at [http://govinfo.library.orst.edu/cgi-bin/bfact?9\\_9\\_25-003.mic](http://govinfo.library.orst.edu/cgi-bin/bfact?9_9_25-003.mic)

1999 "Regional Economic Information System (REIS), REIS Bearfacts for Michigan 1996-97." Accessed on February 1, 2000. Available on Internet at [http://govinfo.library.orst.edu/cgi-bin/bfact?9\\_05-state.mis](http://govinfo.library.orst.edu/cgi-bin/bfact?9_05-state.mis)

n.d. "Regional Economic Information for Alger County, Michigan, Full-time and Part-time Employees by Major Industry." Accessed on February 1, 2000. Available on Internet at [http://govinfo.library.orst.edu/cgi-bin/reis-list?9\\_25-033.mic](http://govinfo.library.orst.edu/cgi-bin/reis-list?9_25-033.mic) and [http://govinfo.library.orst.edu/cgi-bin/reis-list?6\\_05-033.mic](http://govinfo.library.orst.edu/cgi-bin/reis-list?6_05-033.mic)

n.d.. "Regional Economic Information for Alger County, Michigan, Personal Income by Major Source and Earnings by Industry." Accessed on February 2, 2000. Available on the Internet at [http://govinfo.library.orst.edu/cgi-bin/reis-list?9\\_05-033.mic](http://govinfo.library.orst.edu/cgi-bin/reis-list?9_05-033.mic) and [http://govinfo.library.orst.edu/cgi-bin/reis-list?6\\_05-033.mic](http://govinfo.library.orst.edu/cgi-bin/reis-list?6_05-033.mic)

### Central Upper Peninsula Planning and Development Regional Commission (CUPPAD)

1999 "Comprehensive Economic Development Strategy Report." Escanaba, Michigan.

### Figlio, D.N.

1992 "The Economic Impact of Pictured Rocks National Lakeshore on the Local Community." Technical report submitted to the Cooperative Studies Park Unit, University of Wisconsin, Madison, Wisconsin.

### Goerler, Raimund E.

1998 *Pictured Rocks National Lakeshore: Archival Assessment and Survey*. Columbus, OH: Raimund Goerler.

### Jones, Bruce A.

1993 "Archeological Inventory and Evaluative Testing in Pictured Rocks National Lakeshore, Michigan, 1985-1990." *Occasional Studies in Anthropology* No. 30, 1993.

Loope, Walter L. and John B. Anderton

1998 "Human vs. Lightning Ignition of Presettlement Surface Fire in Coastal Pine Forests of the Upper Great Lakes." *The American Midland Naturalist*, vol. 140, no. 2.

Mark F. Pfaller Associates, Inc., Architects

1981 "Historic Resource Study: Pictured Rocks National Lakeshore, Michigan," by Frederick Stonehouse. Copy available at national lakeshore headquarters.

Munising, Michigan

n.d. "Munising Michigan Welcomes You to Upper Michigan", Munising, Michigan. Accessed on February 2, 2000. Available on the Internet at <http://www.munising.com/>

National Park Service

n.d. *Final Environmental Impact Statement for the Beaver Basin Rim Road*. Denver Service Center, Denver, CO.

1978 "An Inventory of Cultural Resources, Pictured Rocks National Lakeshore," by Louis Torres. Denver Service Center, Denver, CO. Copy available at national lakeshore headquarters.

1996 *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Historic Landscapes*, edited by Charles A. Birnbaum and Christina C. Peters. Washington, D.C.

1995 "The Pictured Rocks: An Administrative History of Pictured Rocks National Lakeshore." Prepared under contract to Midwest Regional Office. Copy available at national lakeshore headquarters.

1998 "Visits from 1979 – 1998 in Database Format", updated on July, 17, 1998. By "Butch" L. Street. NPS Public Use Statistics Office, Denver, Colorado.

2000 "Pictured Rocks National Lakeshore, Virtual Visitor Center". Last update January 17, 2000. Available on Internet at <http://www.nps.gov/the-national-lakeshore>

National Park Service, Southwest Regional Office

1989 "Submerged Cultural Resources Study, Pictured Rocks National Lakeshore," by C. Patrick Labadie. Southwest Cultural Resources Center Professional Papers No. 22.

Pitt, David G., David W. Lime, and Jonathan Vlaming

1991 "Social Impact Assessment, Beaver Basin Rim Road, Pictured Rocks National Lakeshore, Final Report." University of Minnesota, St. Paul Minnesota.

Quinn Evans/Architects

1999 "Historic Structure Report, Au Sable Lighthouse Complex." Prepared for the National Park Service. Copy available at national lakeshore headquarters.

Quinn Evans/Architects and Land and Community Associates

1998 "Au Sable Light Station Cultural Landscape Report." Prepared for the National Park Service.

Simmons, Todd and James H. Gramann

2002 "Pictured Rocks National Lakeshore Visitor Study", National Park Service, Visitor Services Project." Copy available at national lakeshore headquarters.

REFERENCES

Symon, Charles A., ed.

1986 *Alger County: A Centennial History, 1885-1985*. Munising, Michigan: Bayshore Publishing Co.

U.S. Census Bureau

1999 "Poverty 1998." Accessed on February 1, 2000. Available on Internet at <http://www.census.gov/hhes/poverty/poverty98/pv98est1.html>

1999 "Small Area Income and Poverty Estimates, 1995 State and County FTP Files and Description." File *est95mi.dat*, February 12, 1999. Accessed on February 3, 2000. Available on Internet at [http://www.census.gov/housing/saipe/estmod95/est95\\_MI.dat](http://www.census.gov/housing/saipe/estmod95/est95_MI.dat)

U.S. Fish and Wildlife Service, Region 3

1983 *Northern States Bald Eagle Recovery Plan*. Prepared by the Northern States Bald Eagle Recovery Team. Copy available at Fish and Wildlife Reference Service, 3840 York St., Unit 1, Denver, CO 80225, 303/571-4656.

1992 Recovery Plan for the Eastern Timber Wolf. Region 3, Twin Cities, MN.

2000 *Wolf Recovery in the Western Great Lakes States*. Available on Internet at [www.fws.gov/R3PAO/wolf/wgl/r3wolfct.htm](http://www.fws.gov/R3PAO/wolf/wgl/r3wolfct.htm)

University of Arizona, Tucson,

1999 "(Draft) *Traditional Ojibway Resources in the Western Great Lakes*." Bureau of Applied Research in Anthropology. Tucson, AZ. Copy available at national lakeshore headquarters.

University of Michigan

1968 "Final Report: An Archaeological Survey of the Pictured Rocks Lakeshore." Prepared for the National Park Service under contract by Jeffrey P. Briggs. Copy available at national lakeshore headquarters.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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